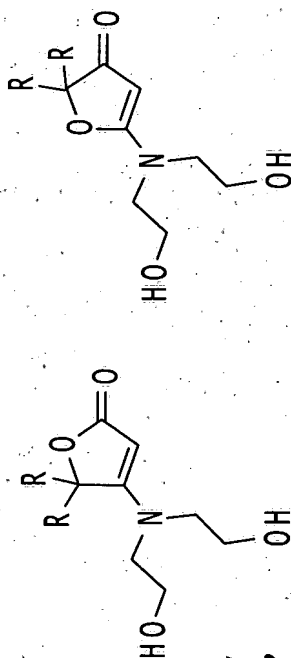
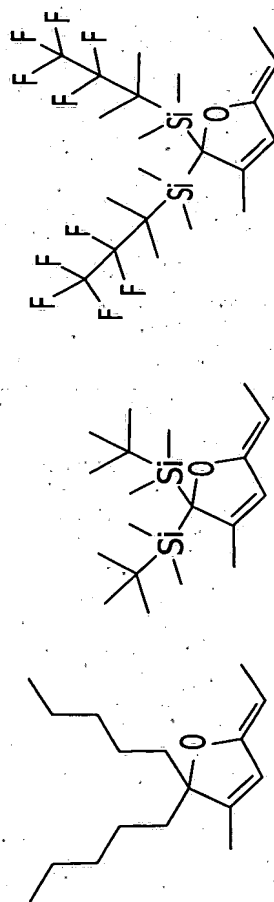


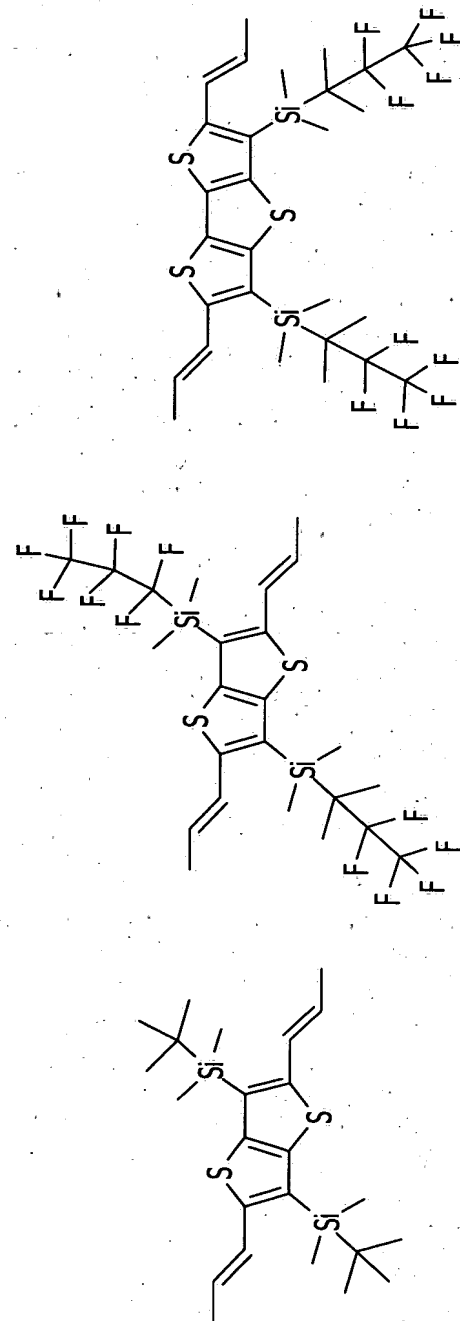
1/45



**Fig. 1A.**

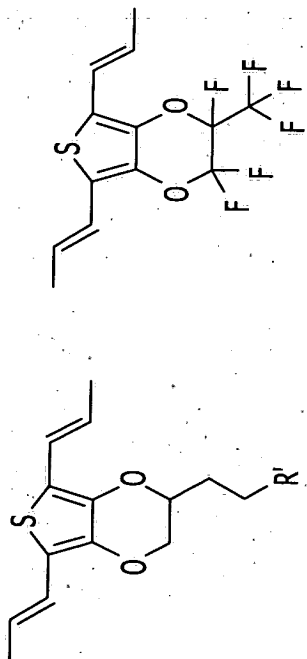
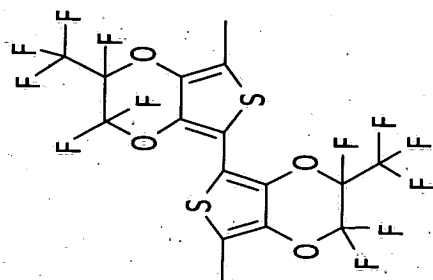


**Fig. 1B.**

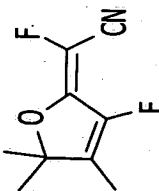
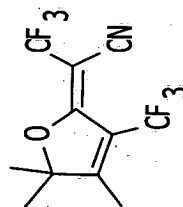
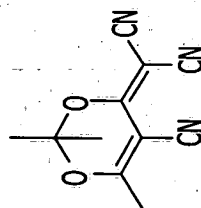
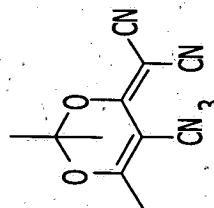
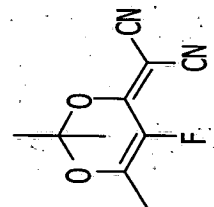


**Fig. 1C.**

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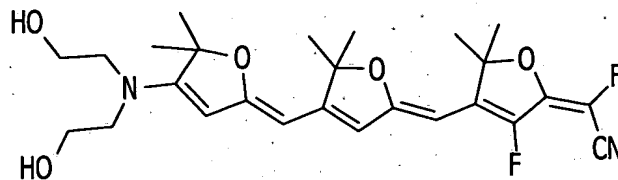


*Fig. 1D.*

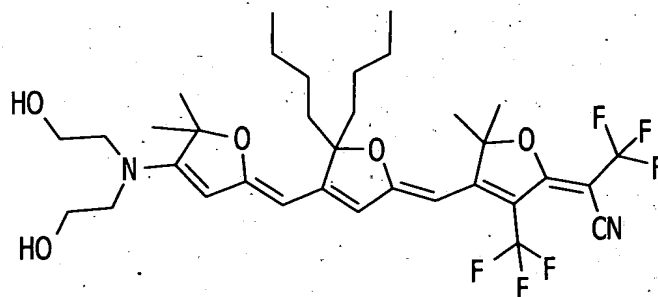


*Fig. 1E.*

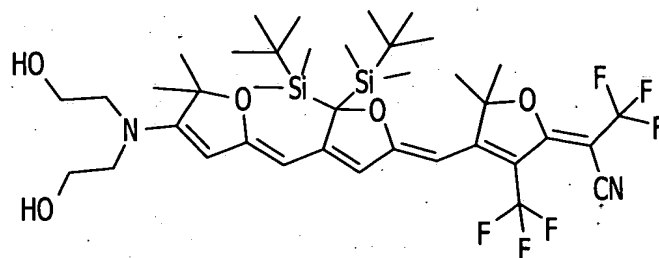
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*Fig. 2A.*



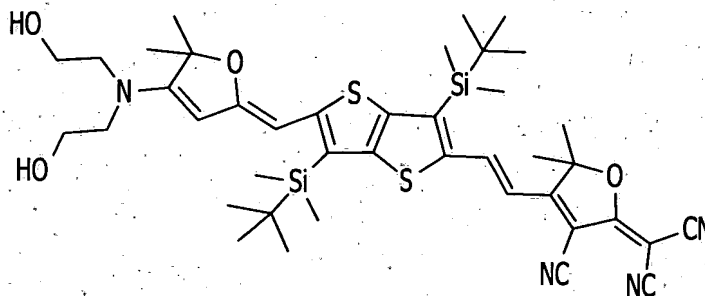
*Fig. 2B.*



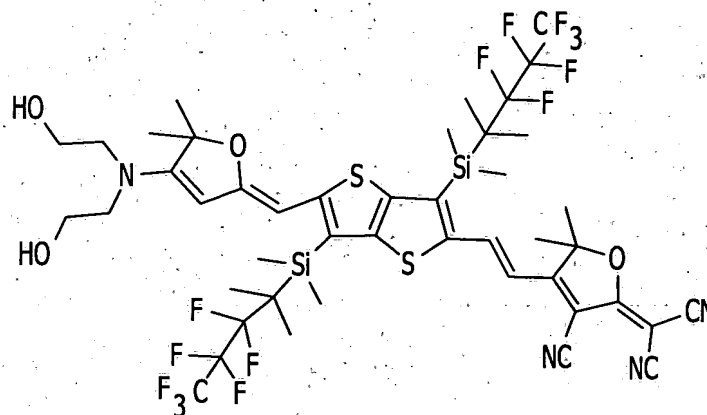
*Fig. 2C.*

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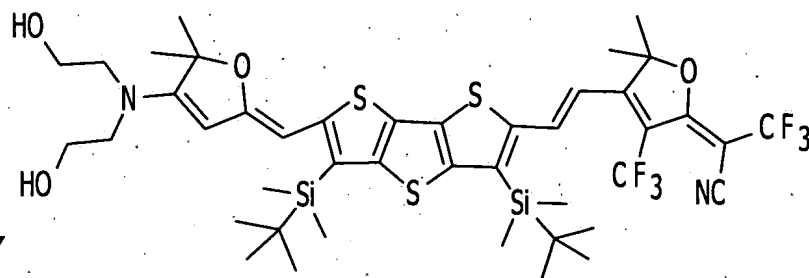
*Fig. 2D.*



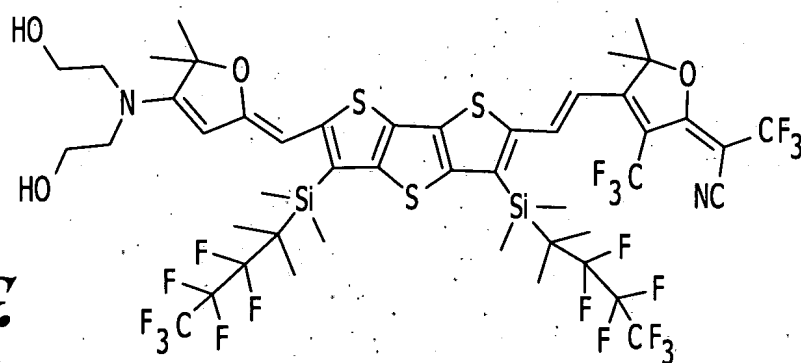
*Fig. 2E.*

2053820-111121660

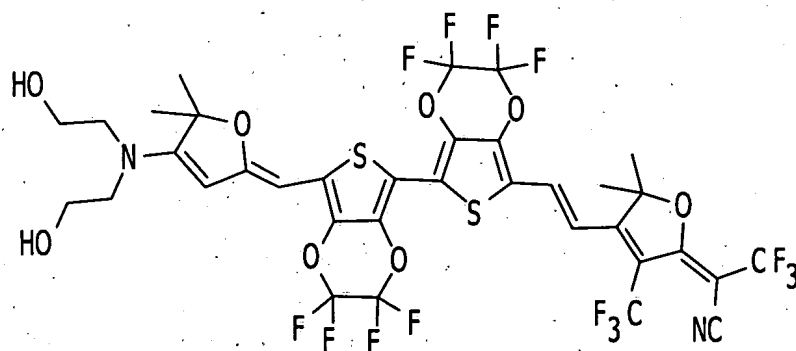
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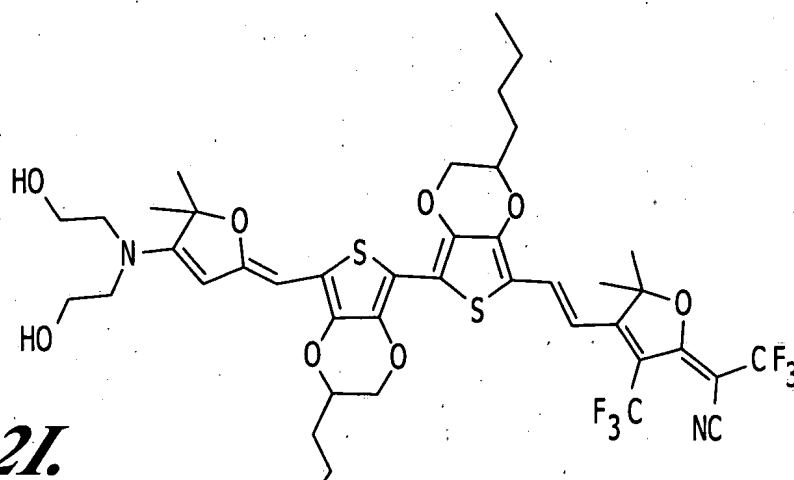
**Fig. 2F.**



**Fig. 2G.**



**Fig. 2H.**



**Fig. 2I.**

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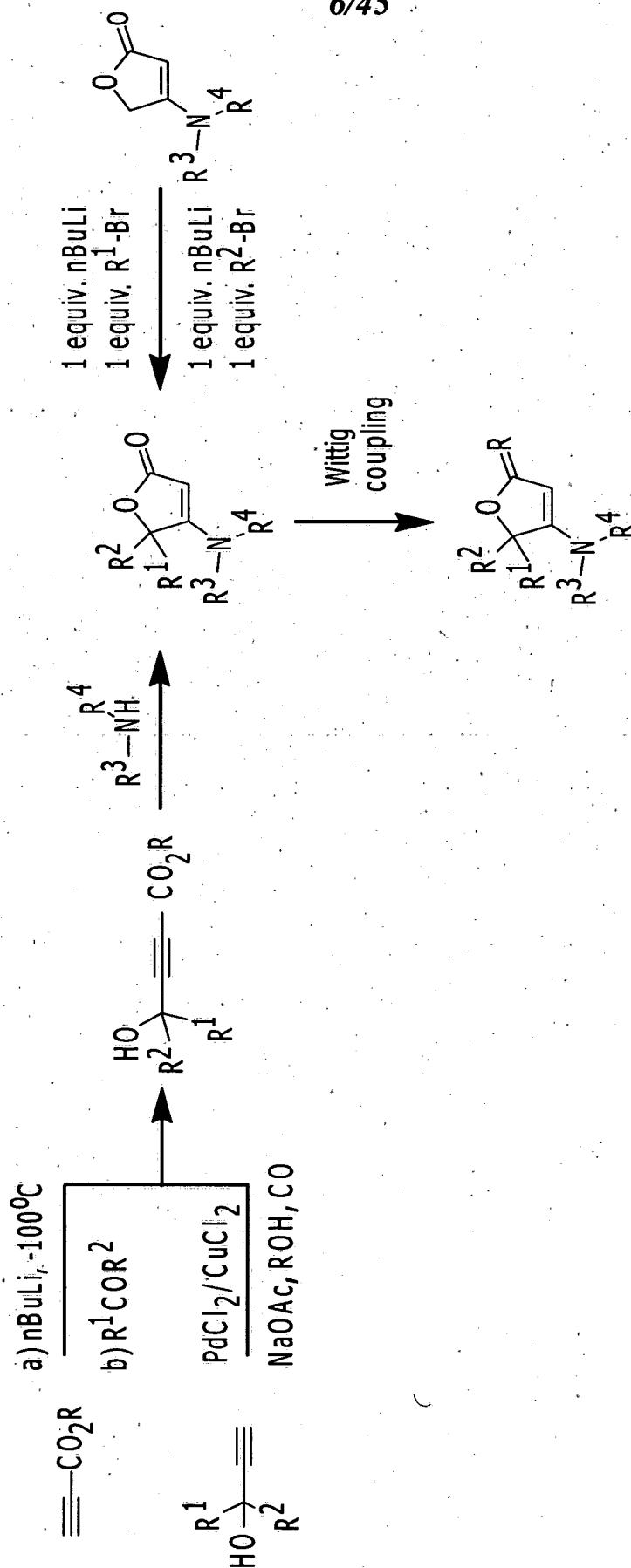
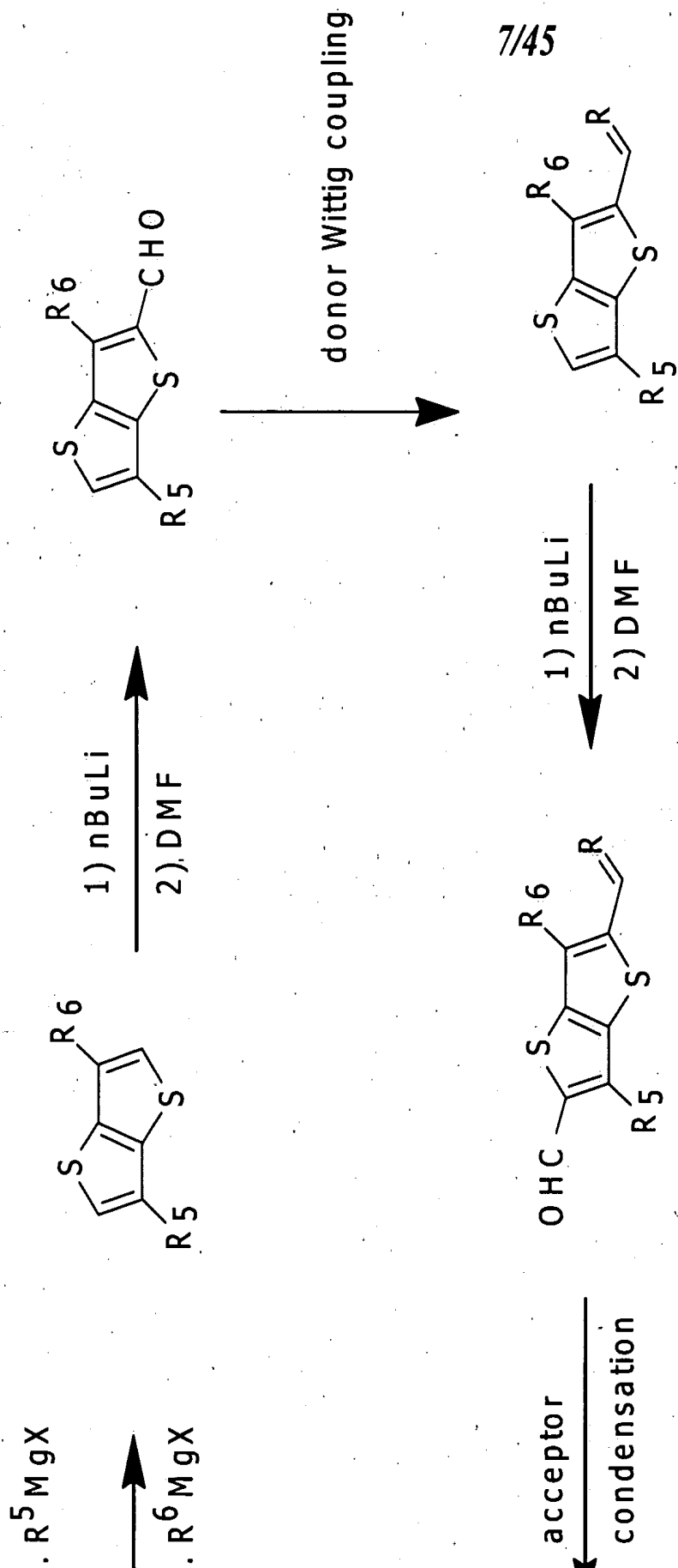


Fig. 3.

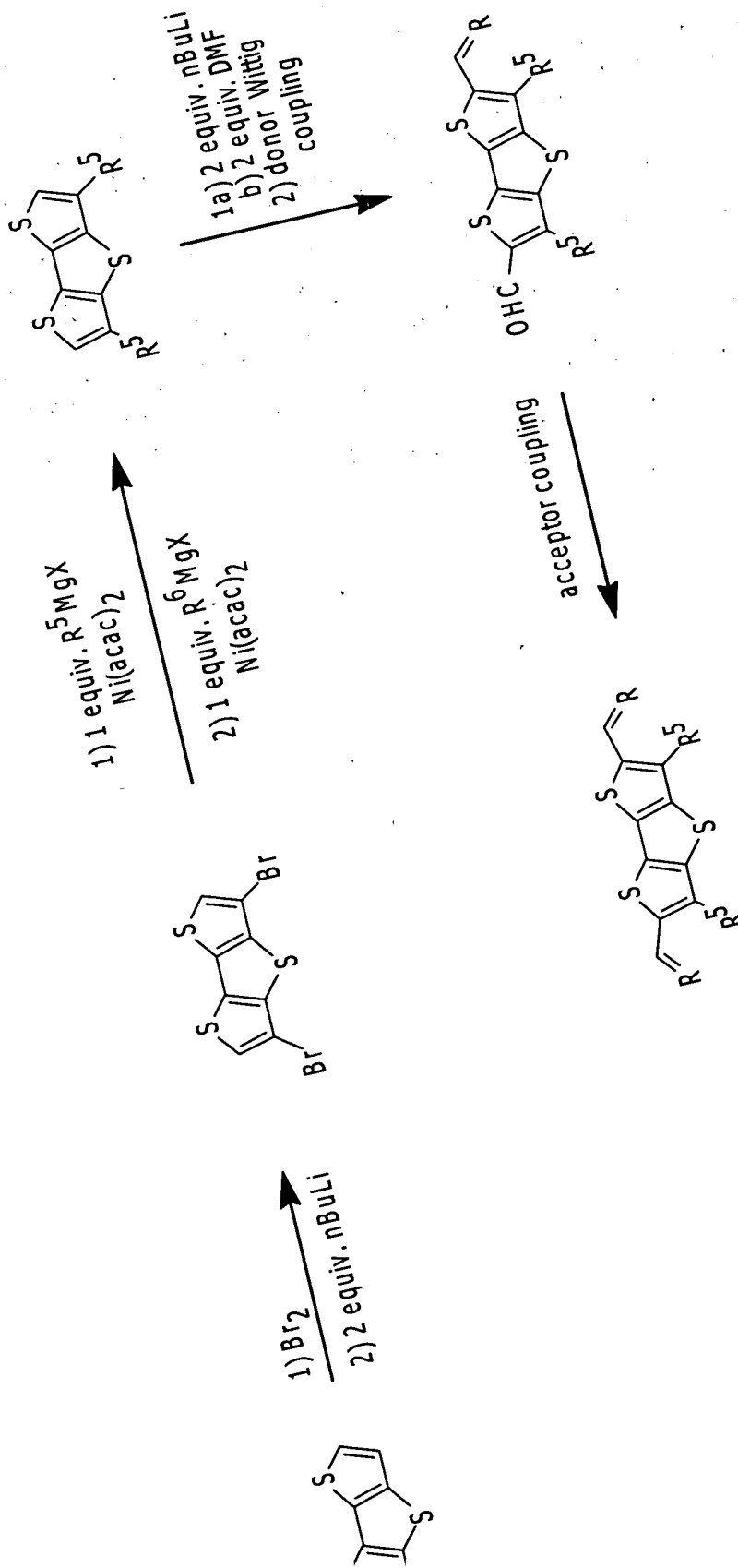


**Fig. 4.**

2050E0 "H112T660"

Title: HYPERPOLARIZABLE ORGANIC CHROMOPHORES  
Inventors: L.R. Dalton et al.  
Application No.: 09/912,444  
Docket No.: UOFW117403

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5.



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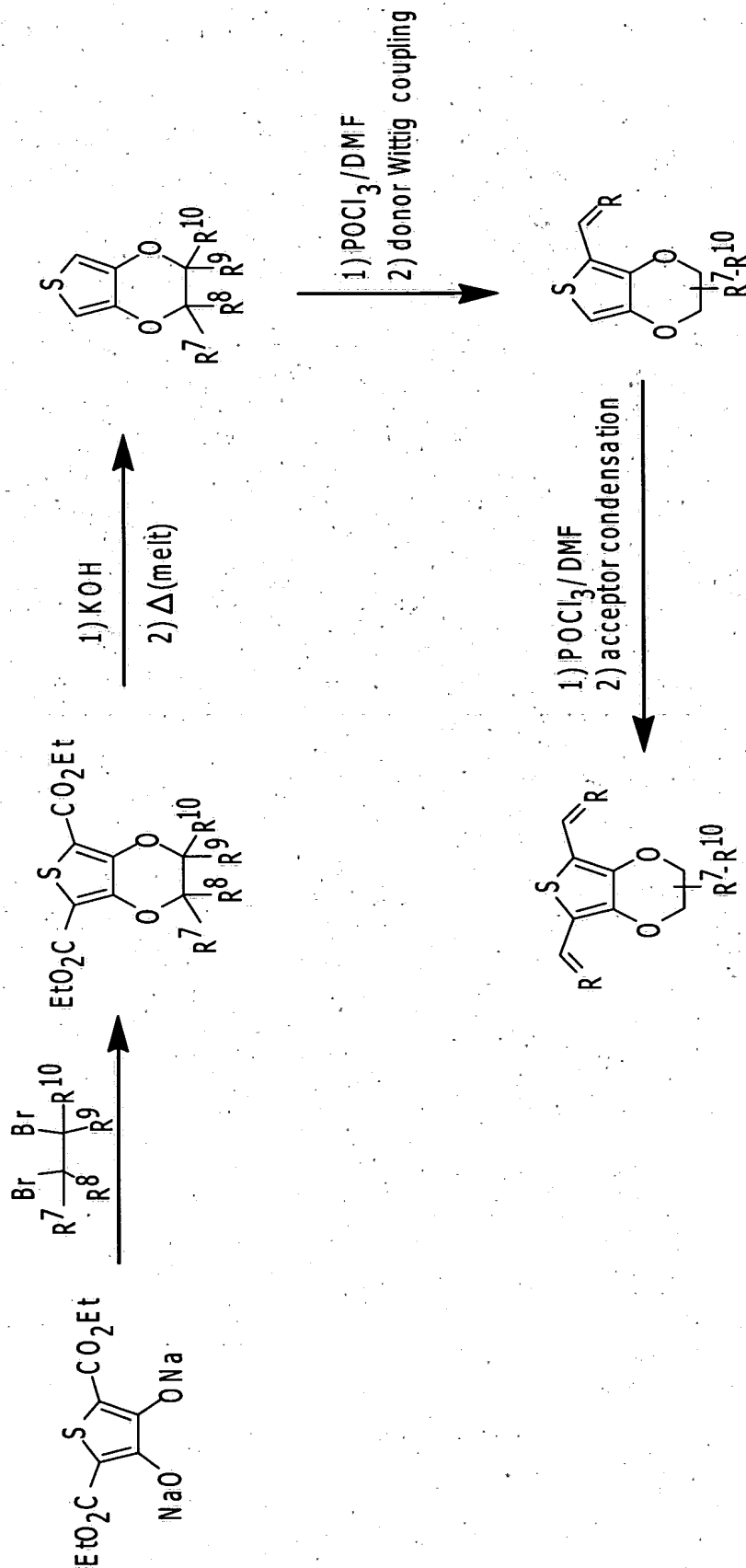


Fig. 6.

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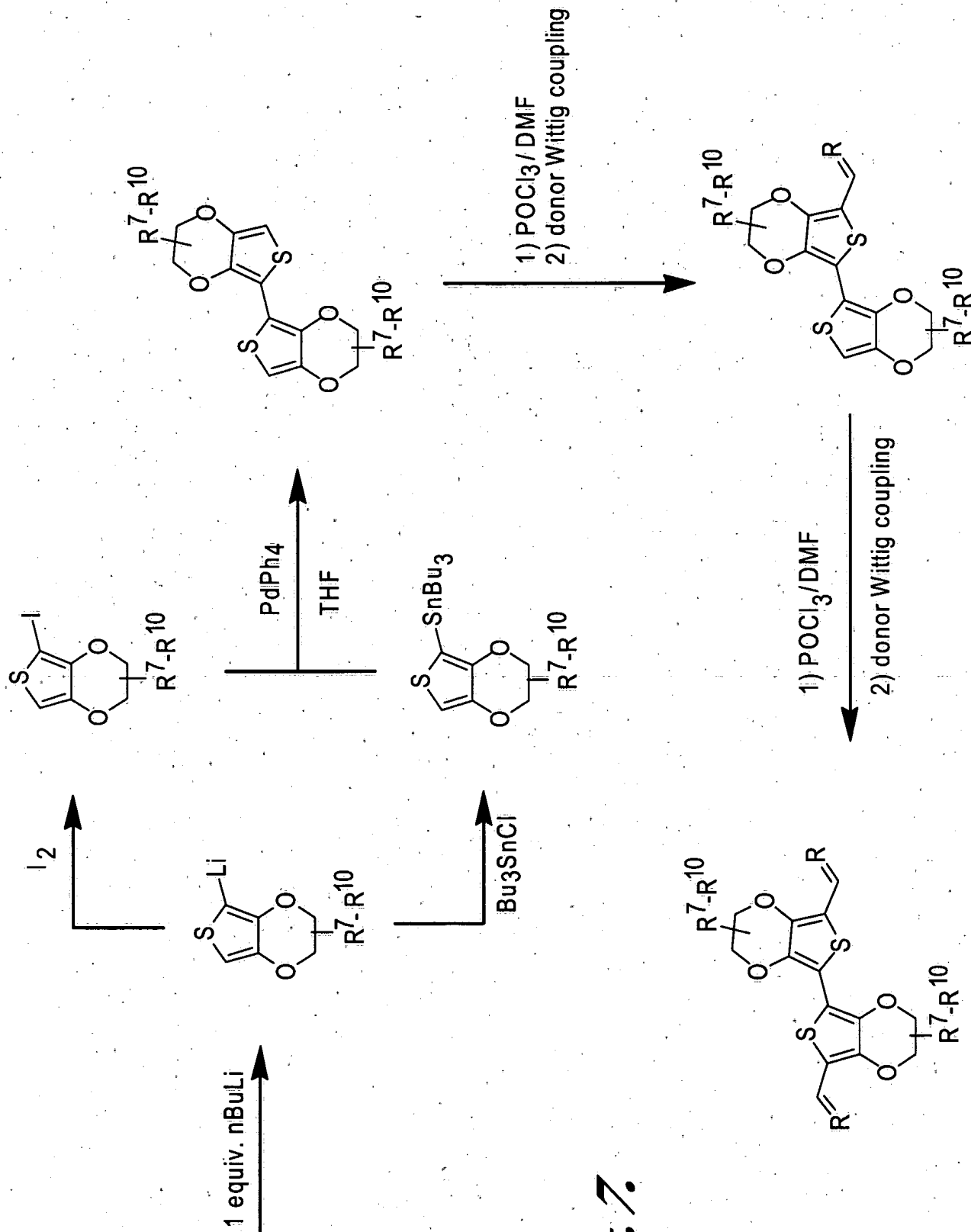
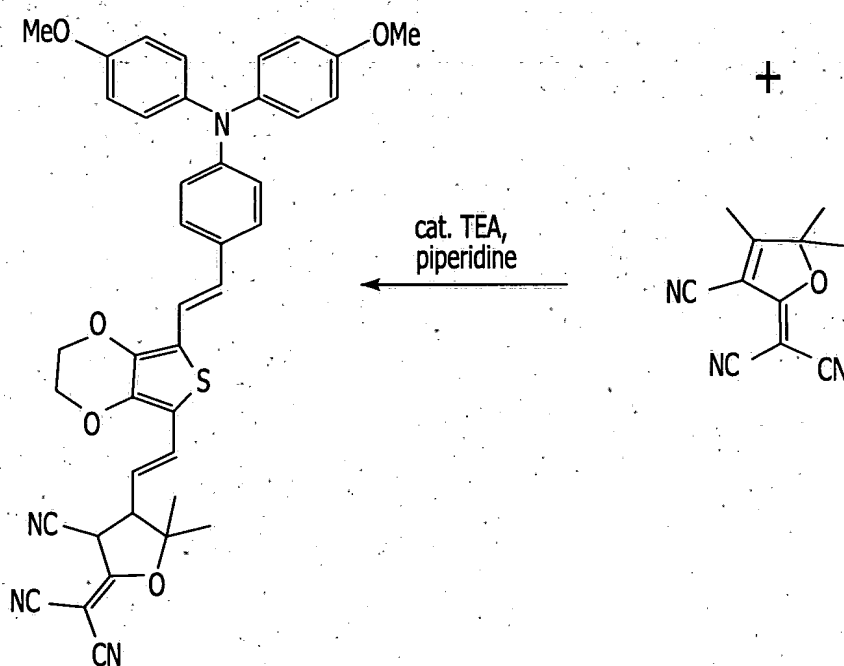
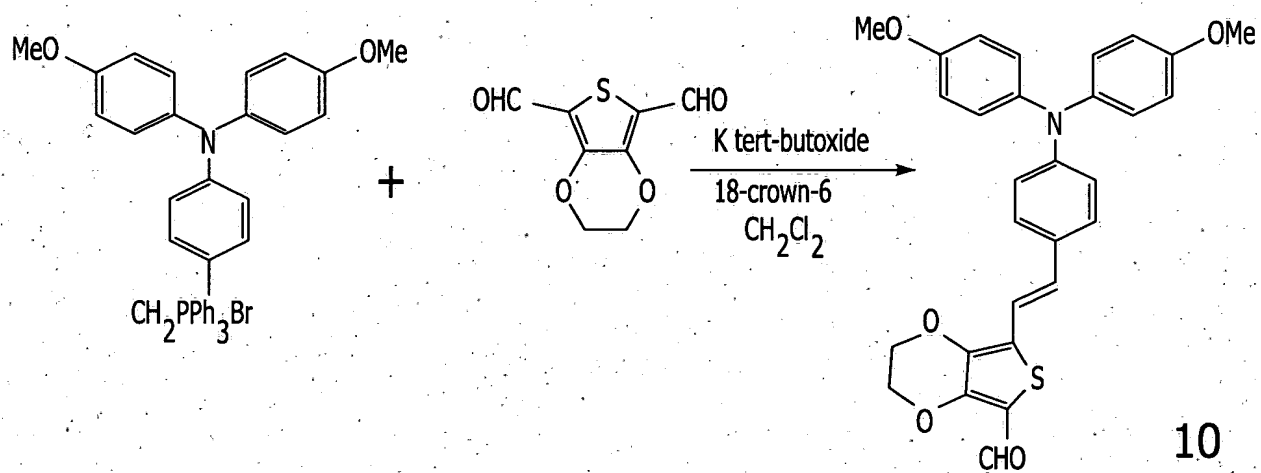


Fig. 7.

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*Fig. 8.*

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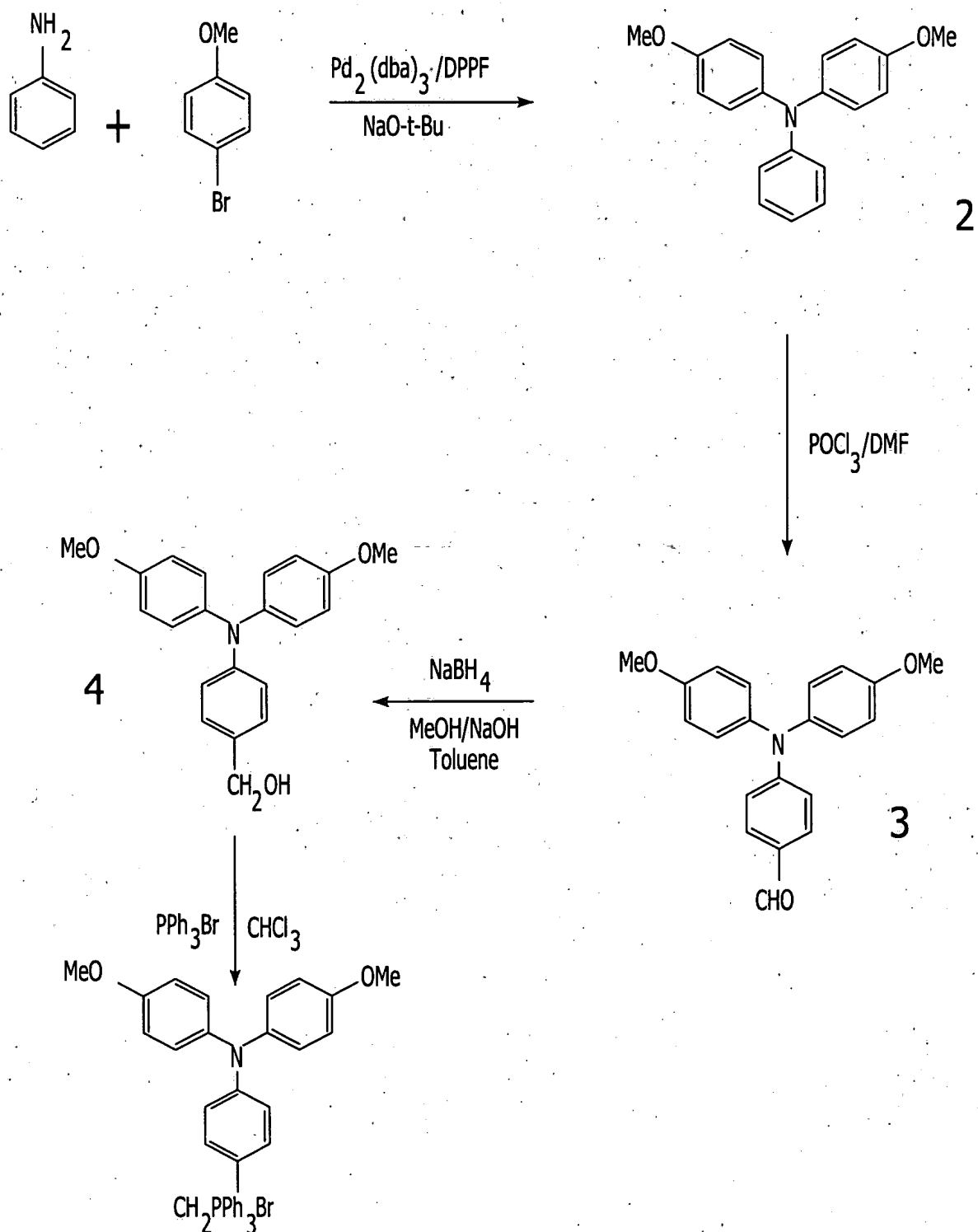
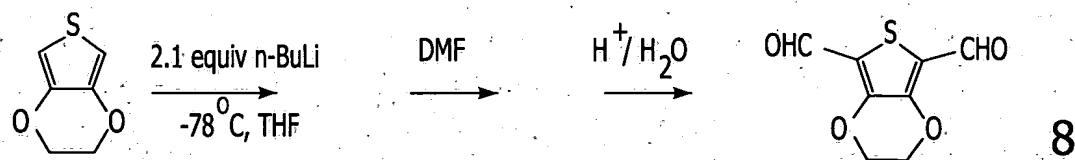
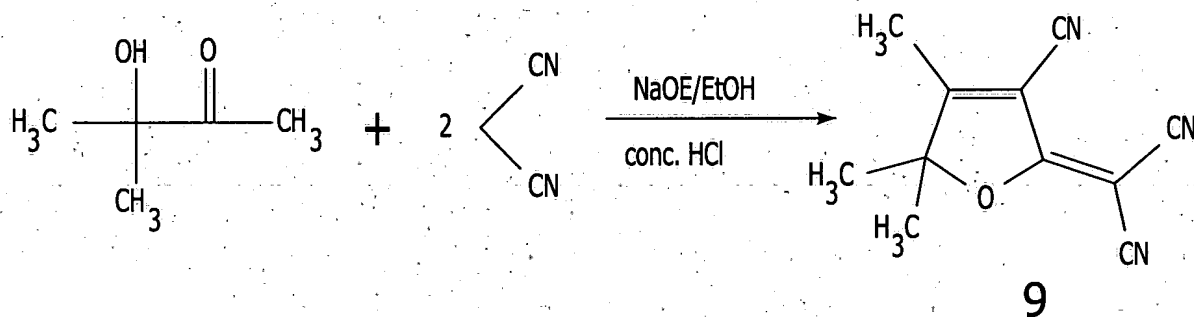


Fig. 9.

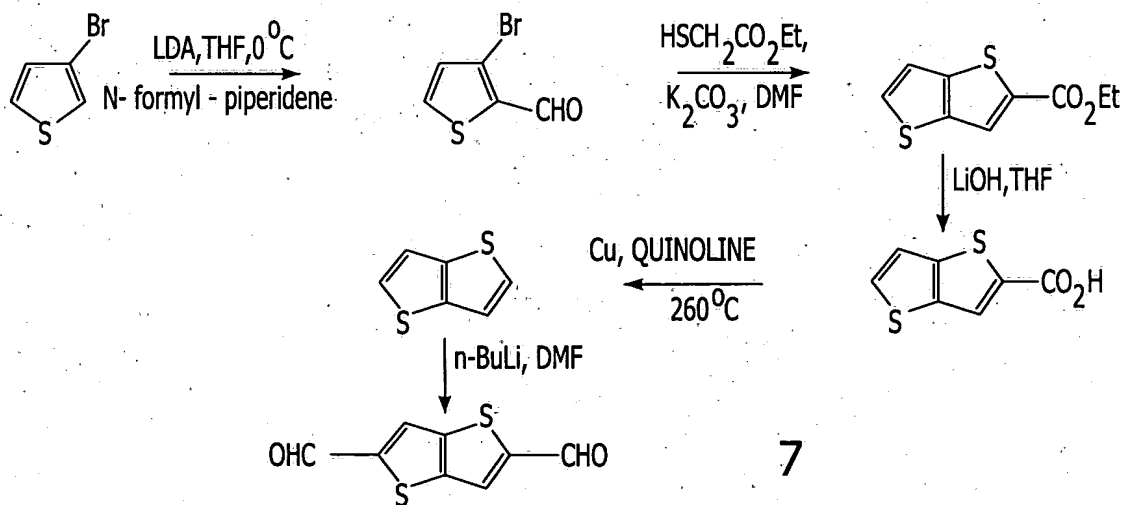
13/45



*Fig. 10.*



*Fig. 11.*



*Fig. 13.*

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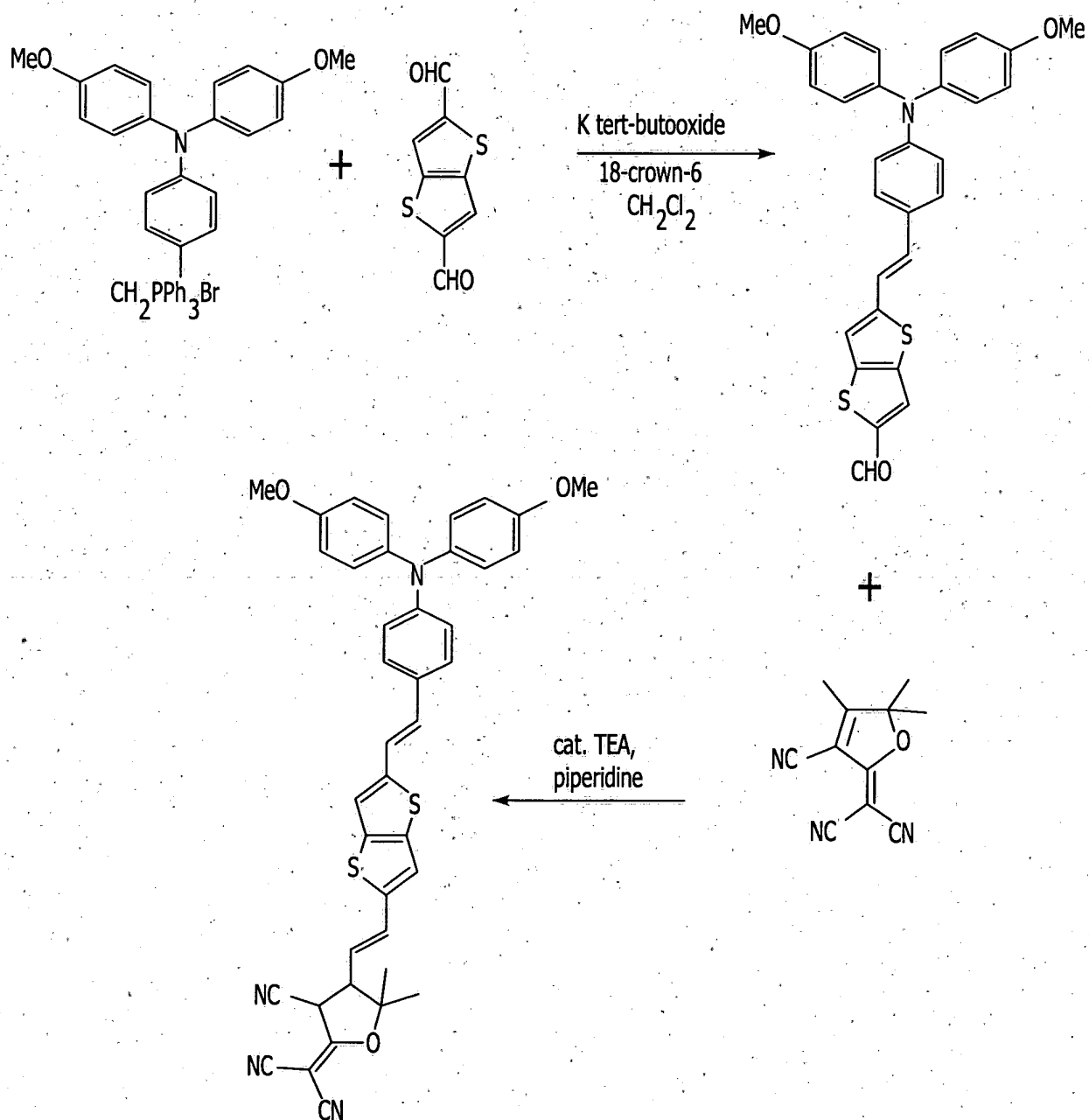
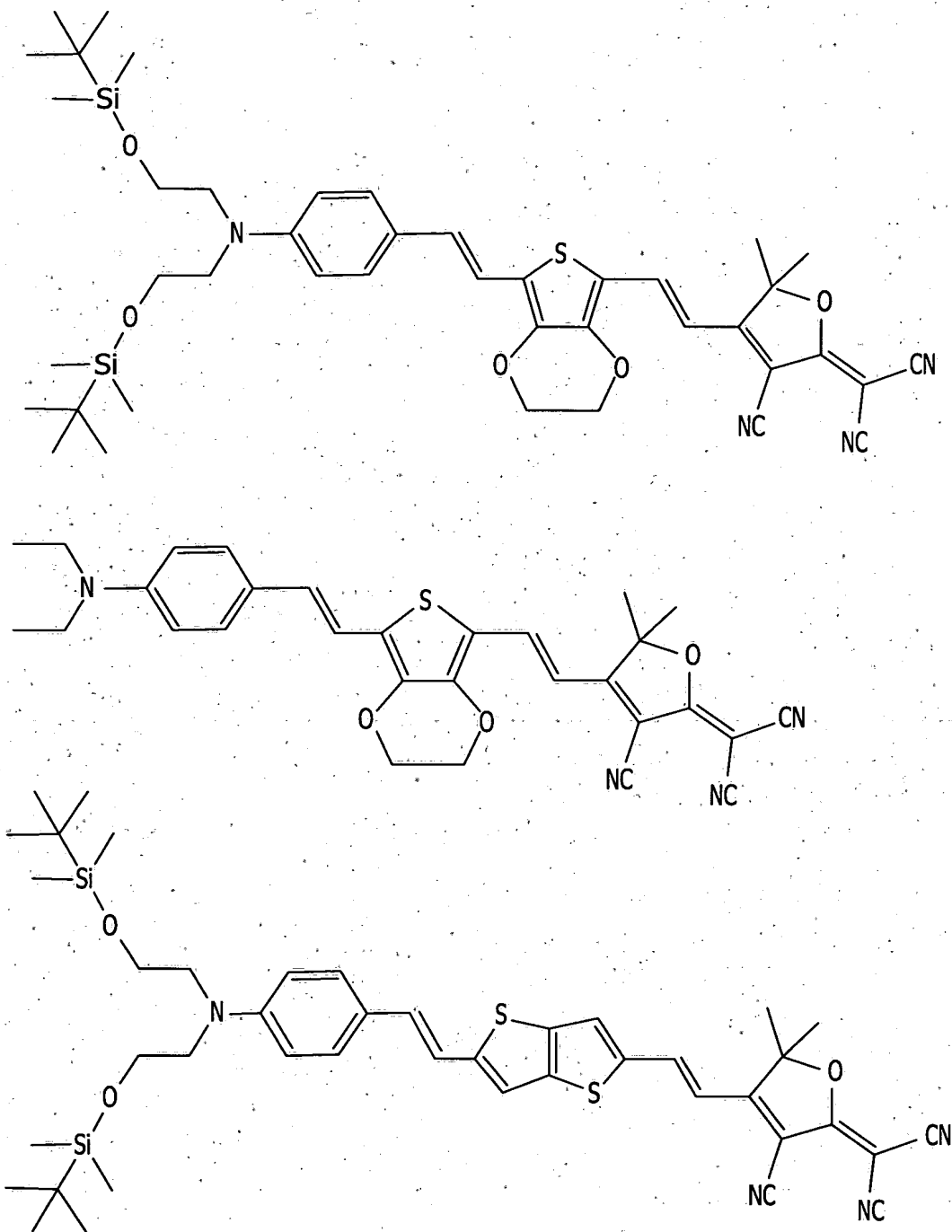


Fig.12.

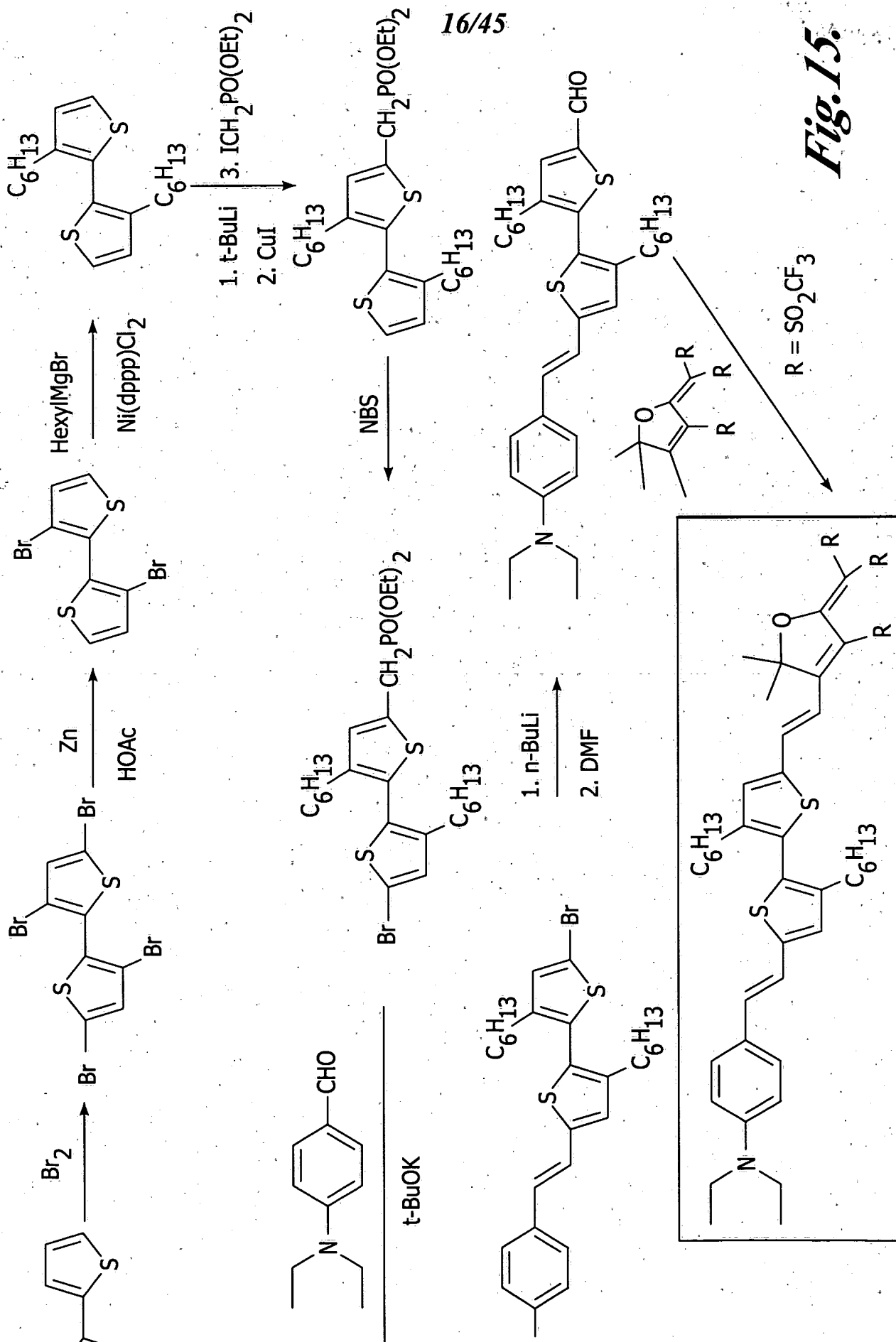
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**Fig.14.**

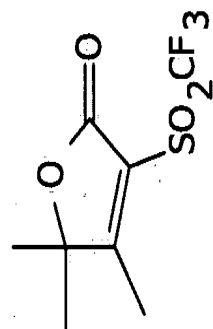
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Fig. 15.





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$\text{KOH}/\text{H}_2\text{O}/\text{Benzene}$

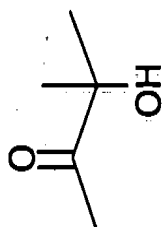


Fig. 16.

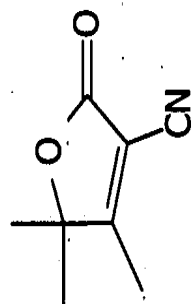
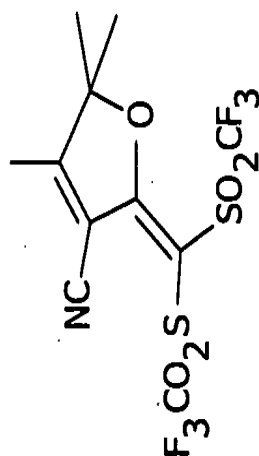
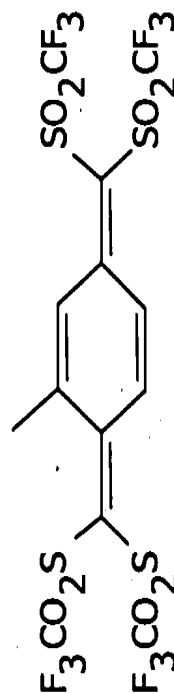
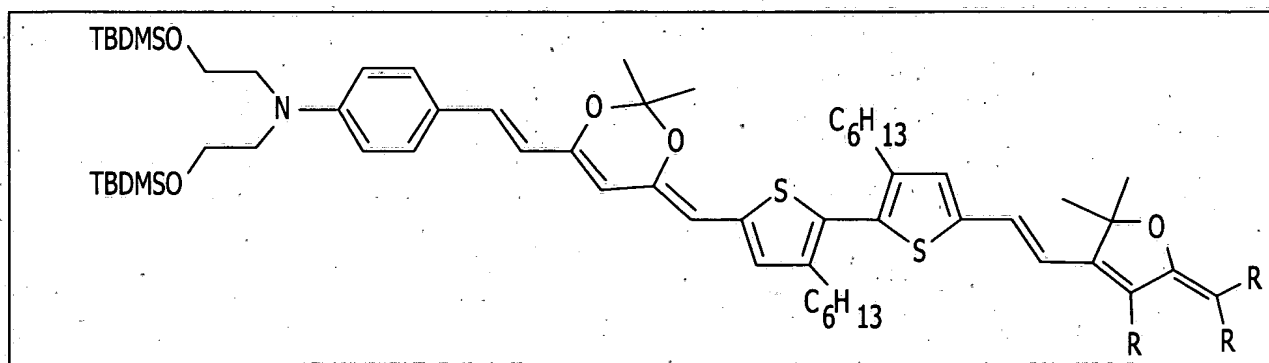
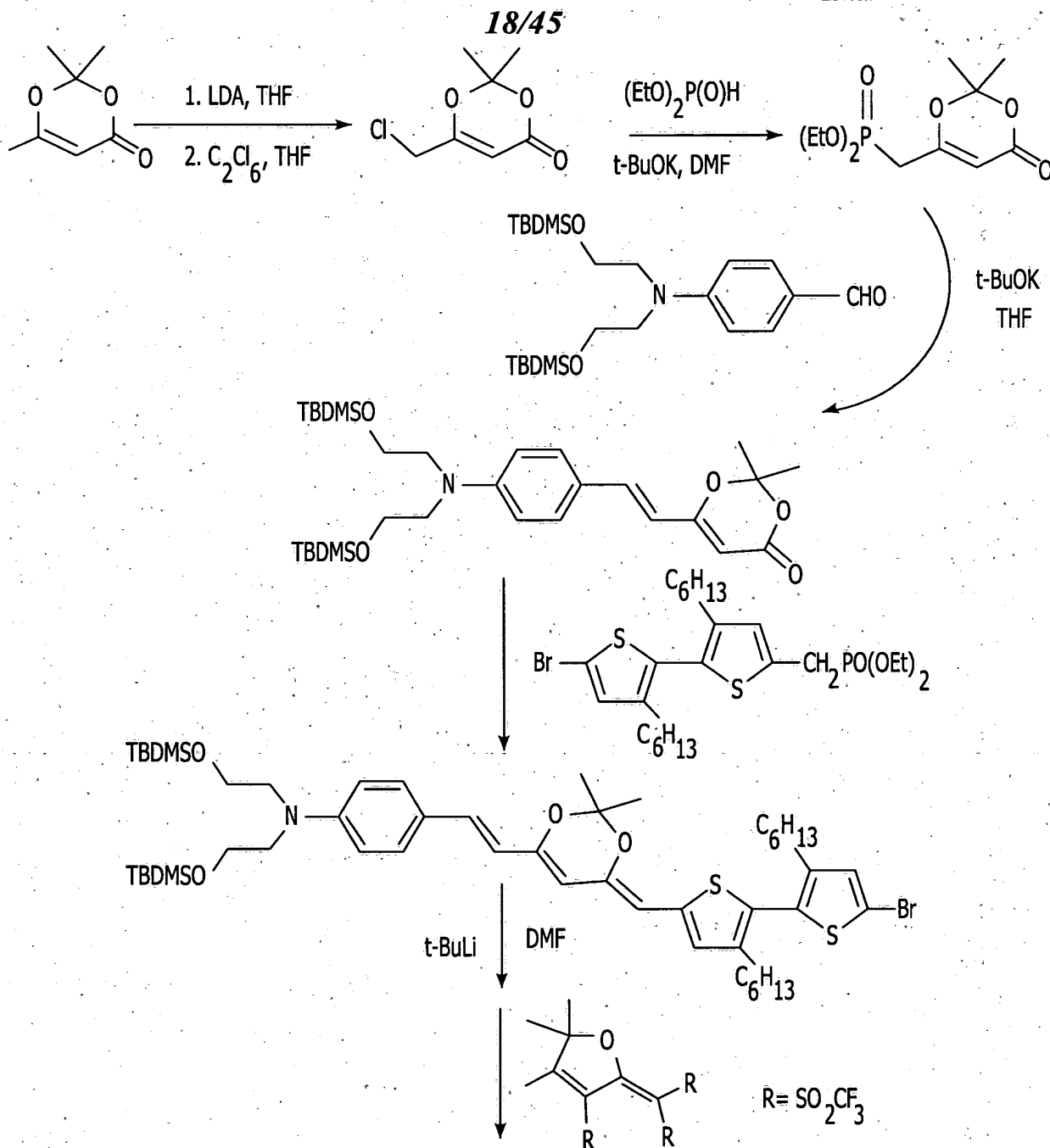


Fig. 19.



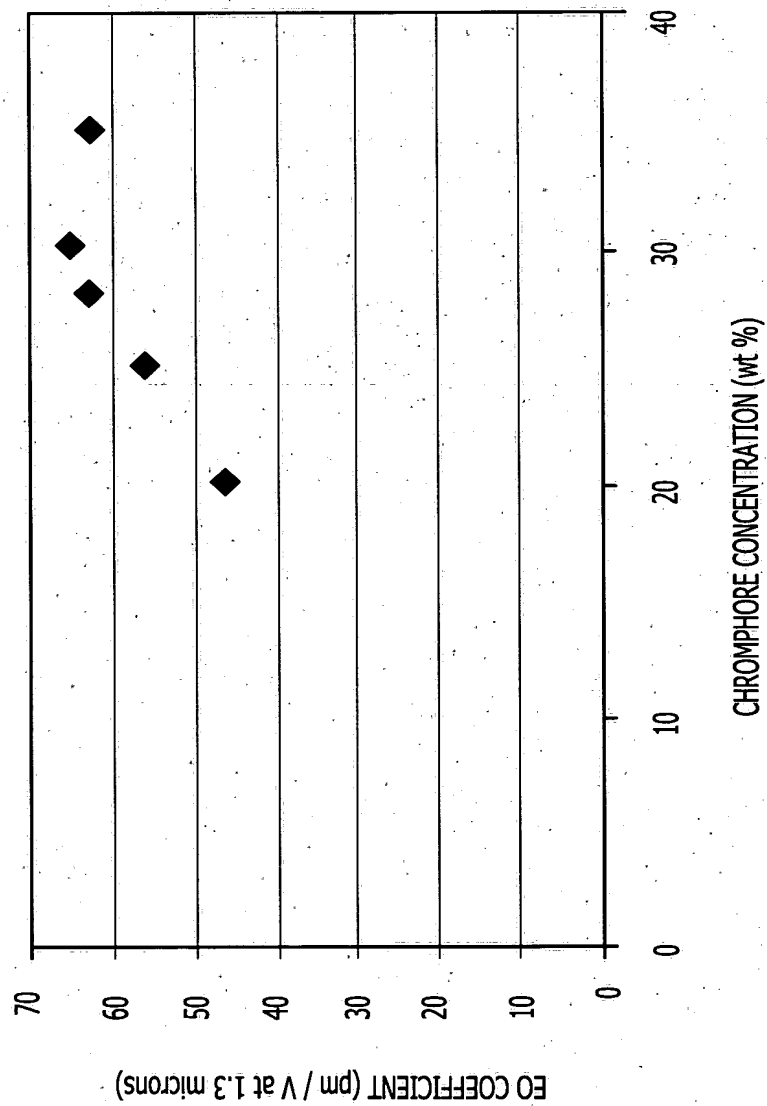
$\text{SO}_2\text{CF}_3$

Fig. 20.



**Fig.17.**

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*Fig. 18.*

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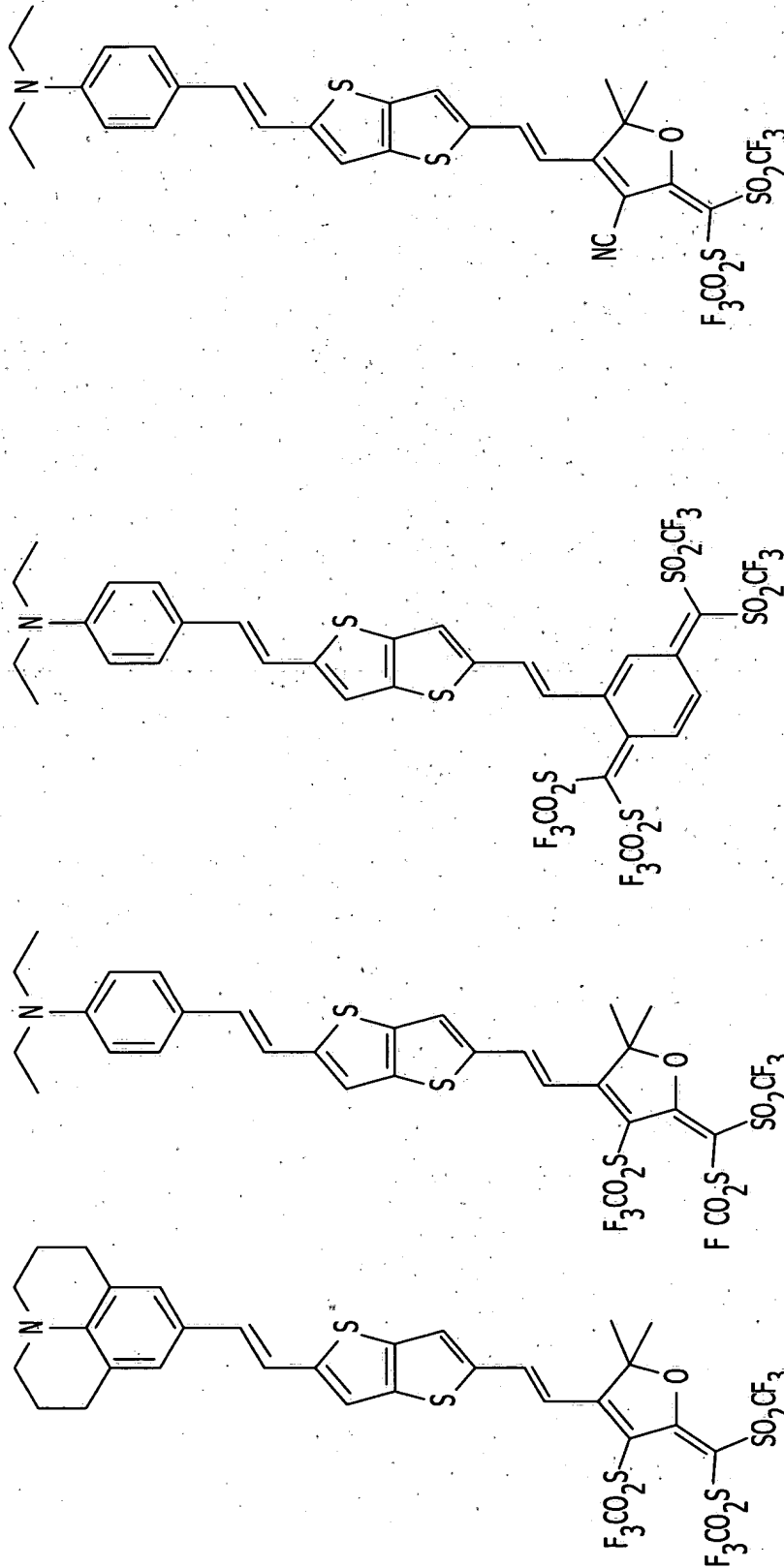


Fig. 21.

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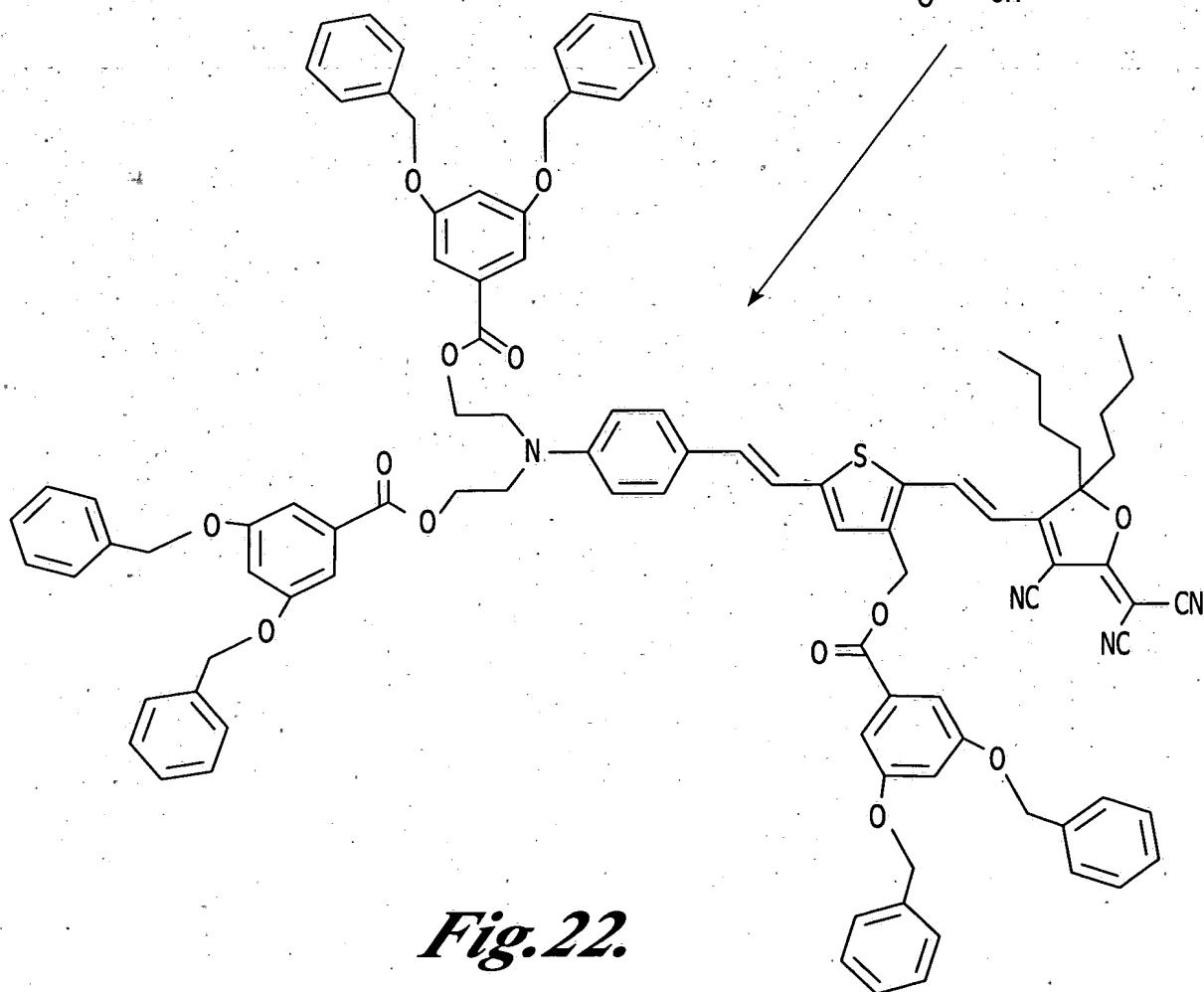
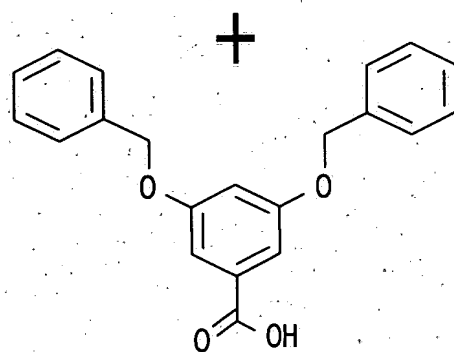
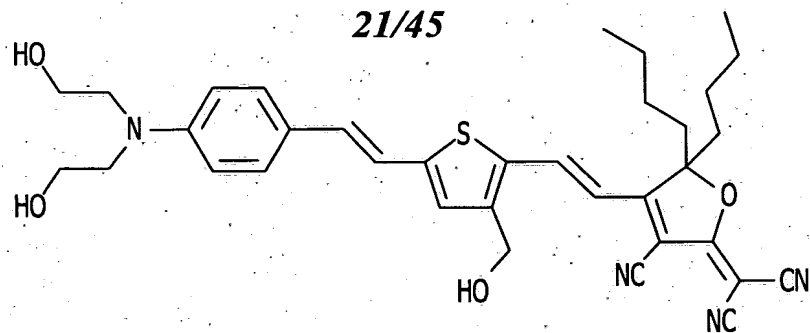
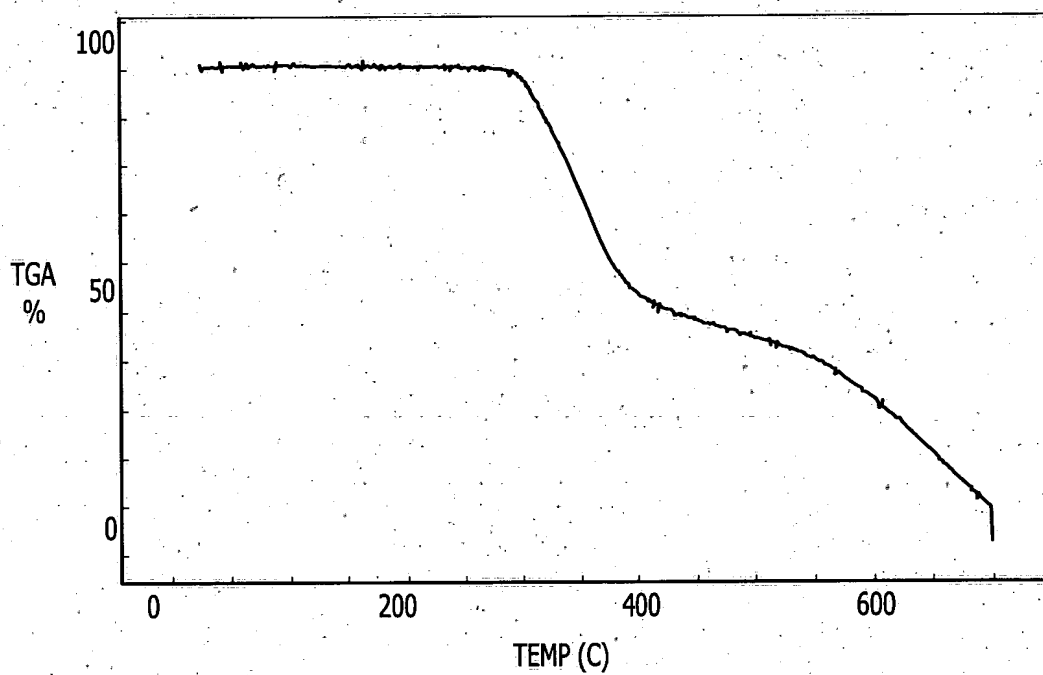


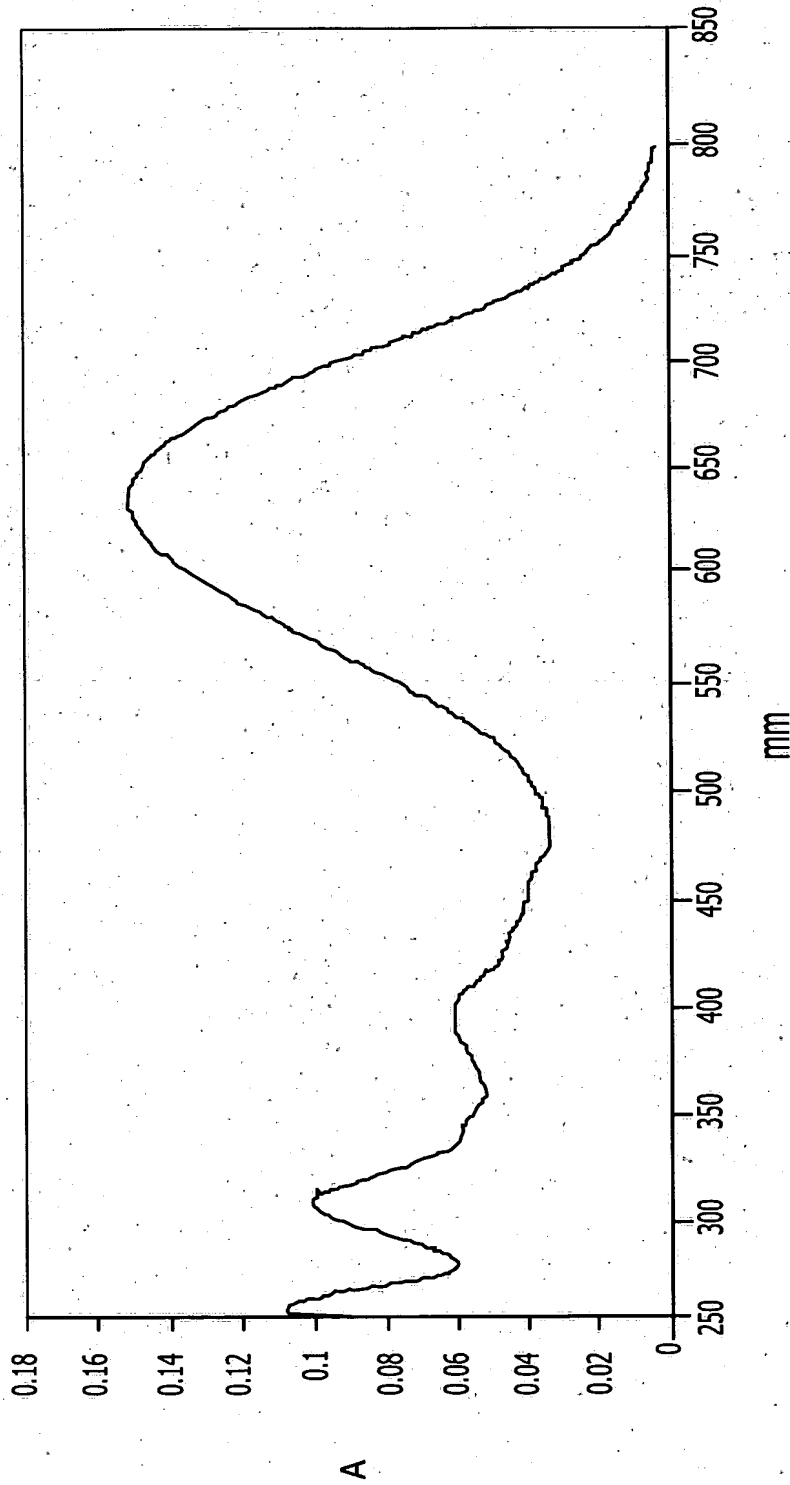
Fig.22.

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*Fig. 23.*

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*Fig. 24.*

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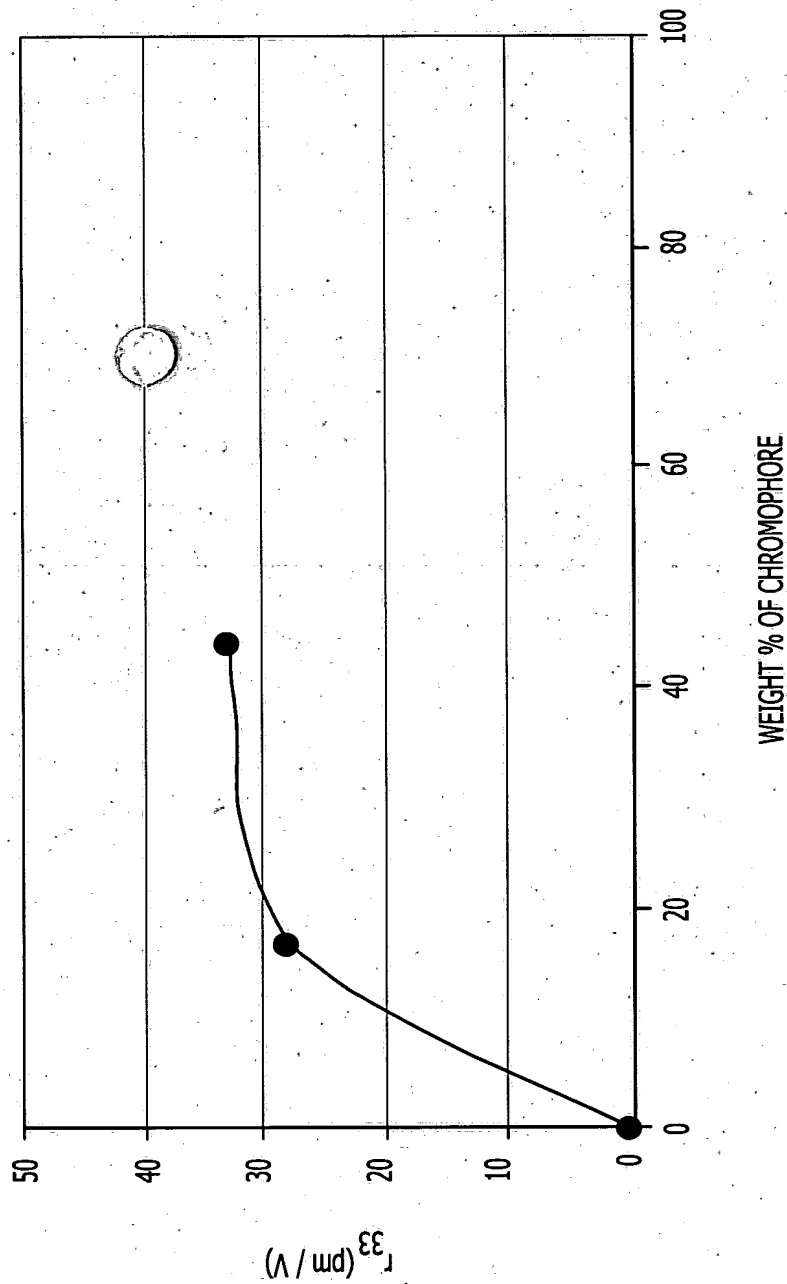


Fig. 25.



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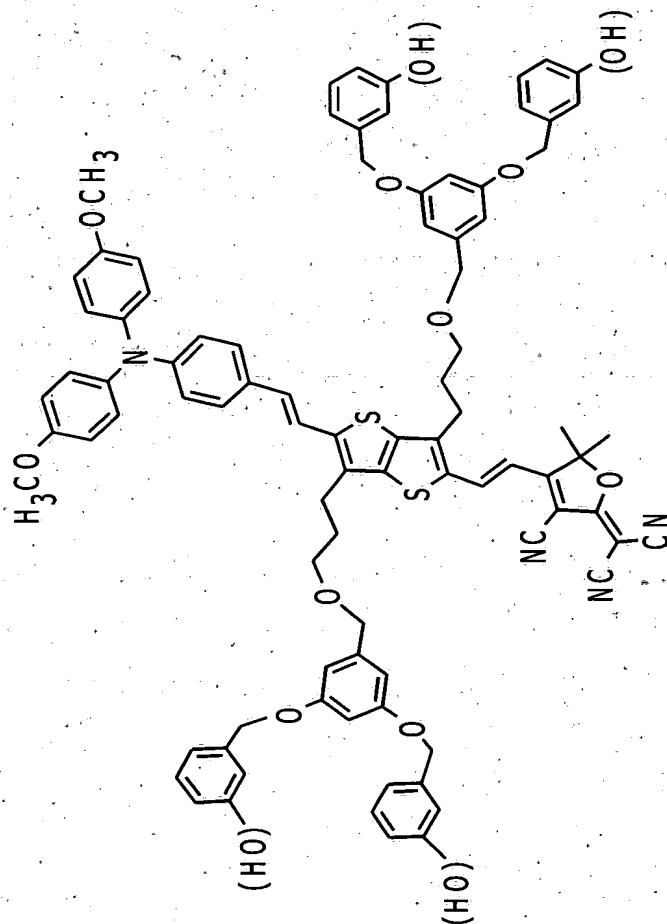
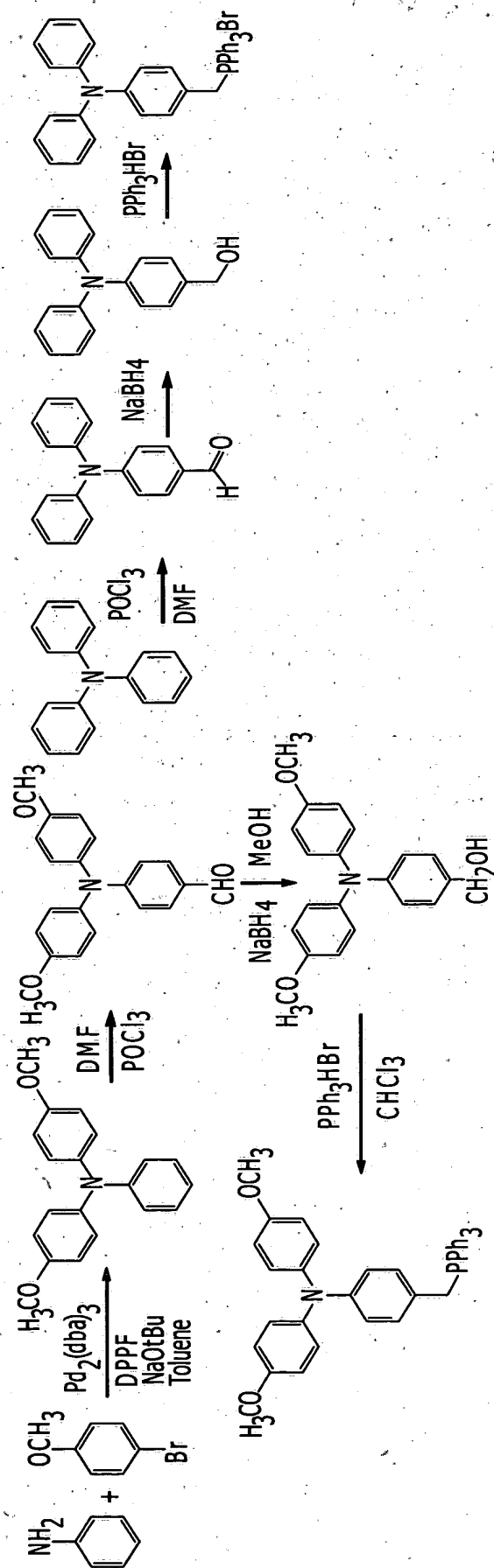
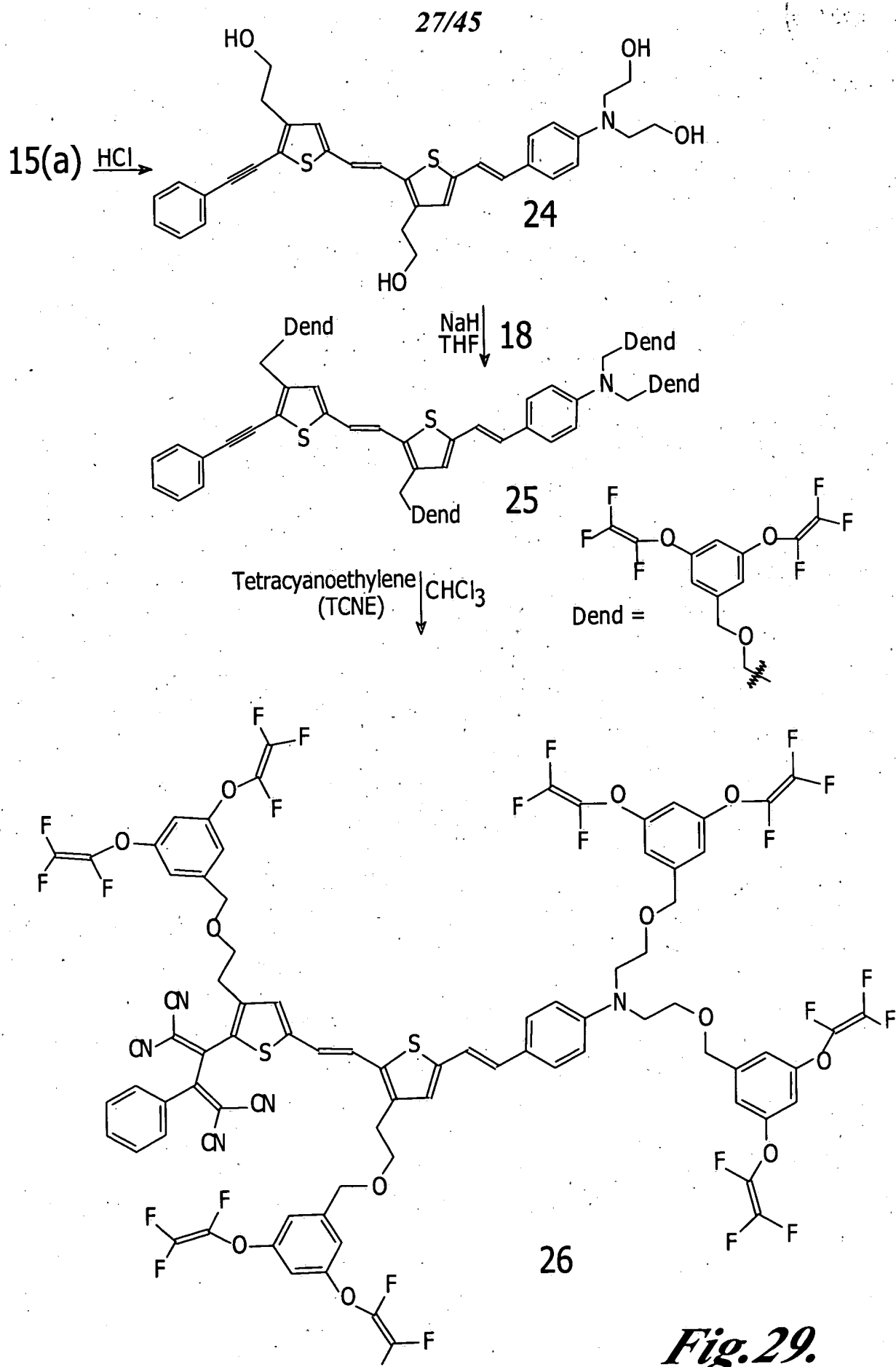


Fig. 26.

Fig. 27.







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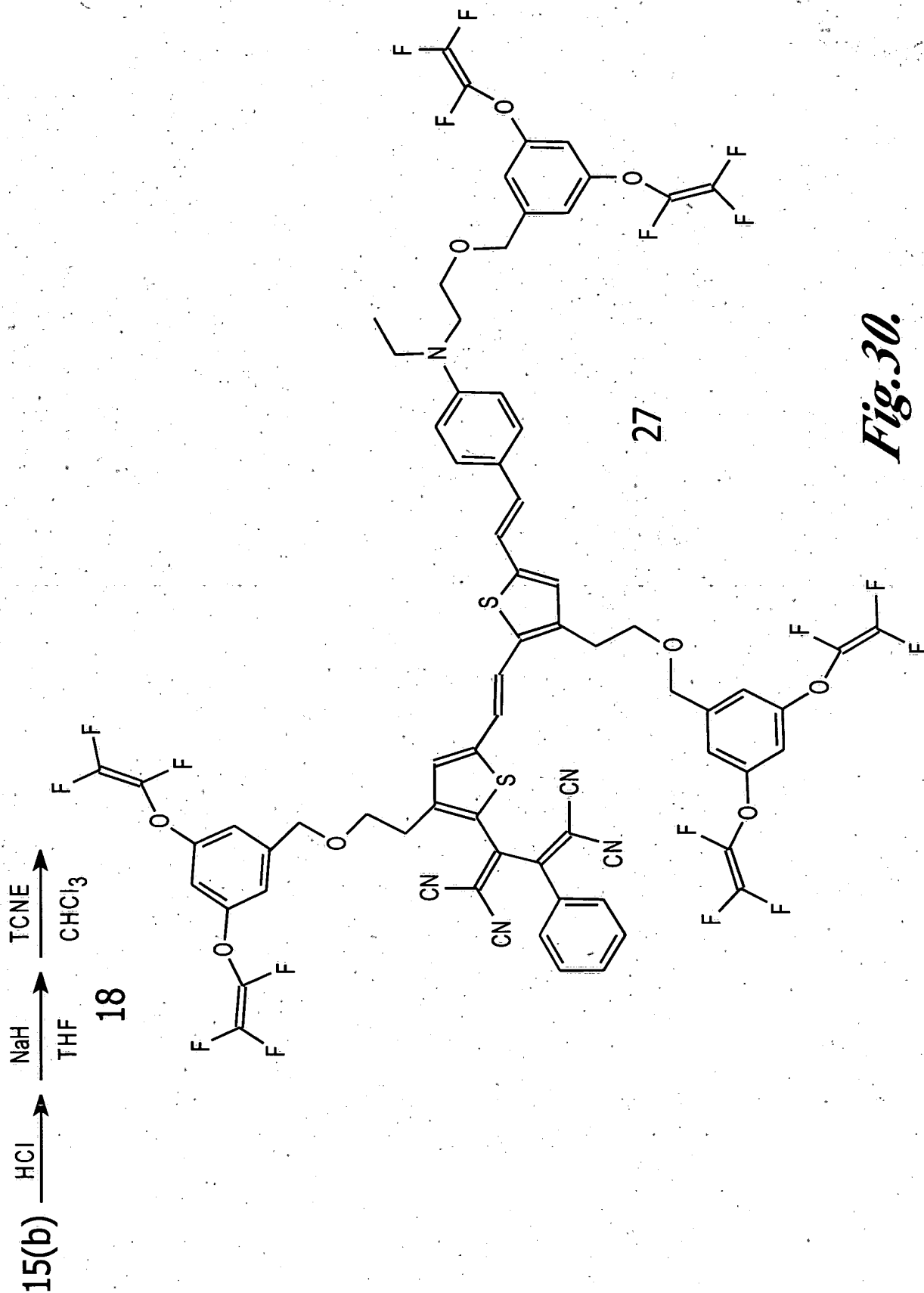
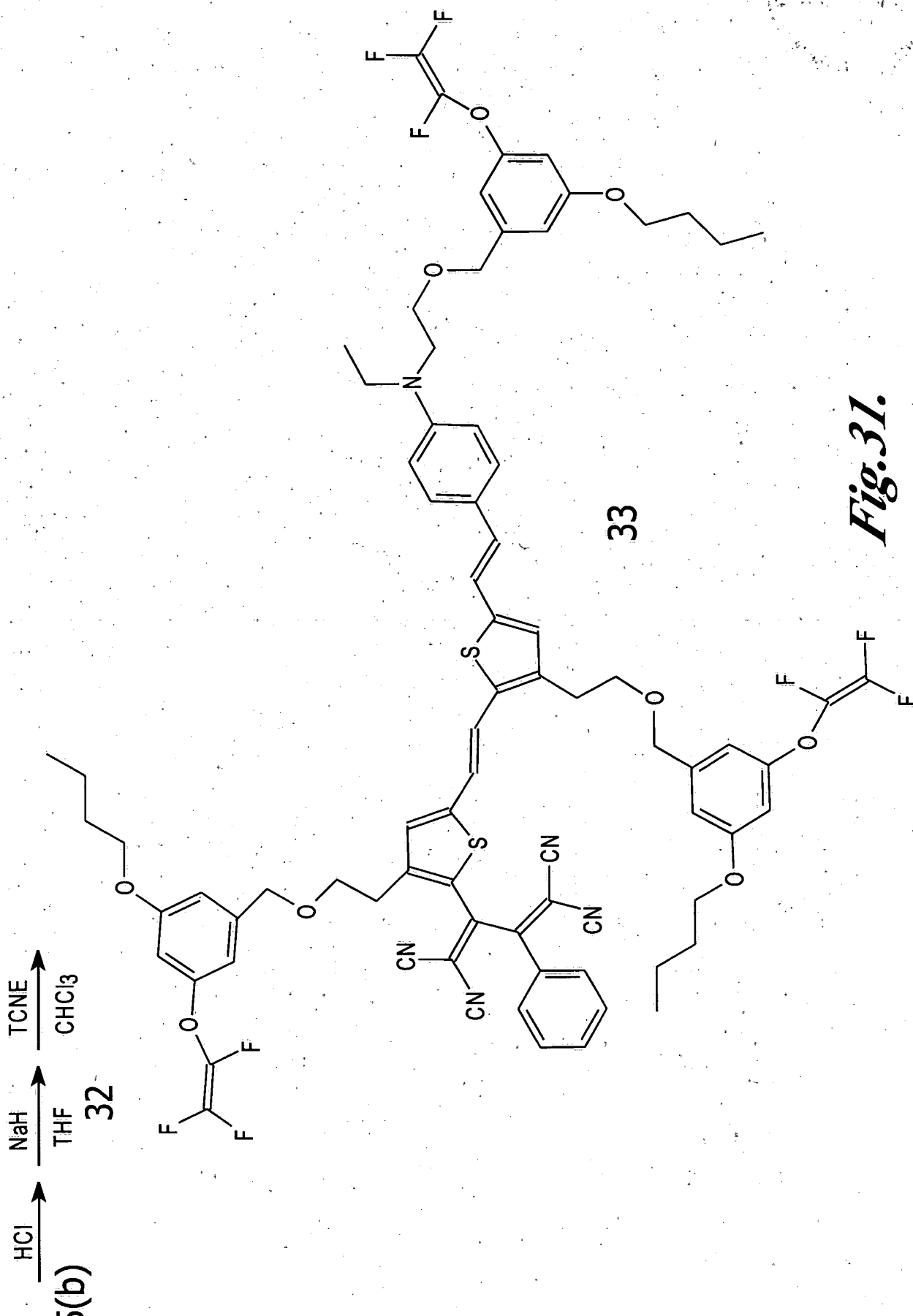


Fig. 30.

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**SECRET**



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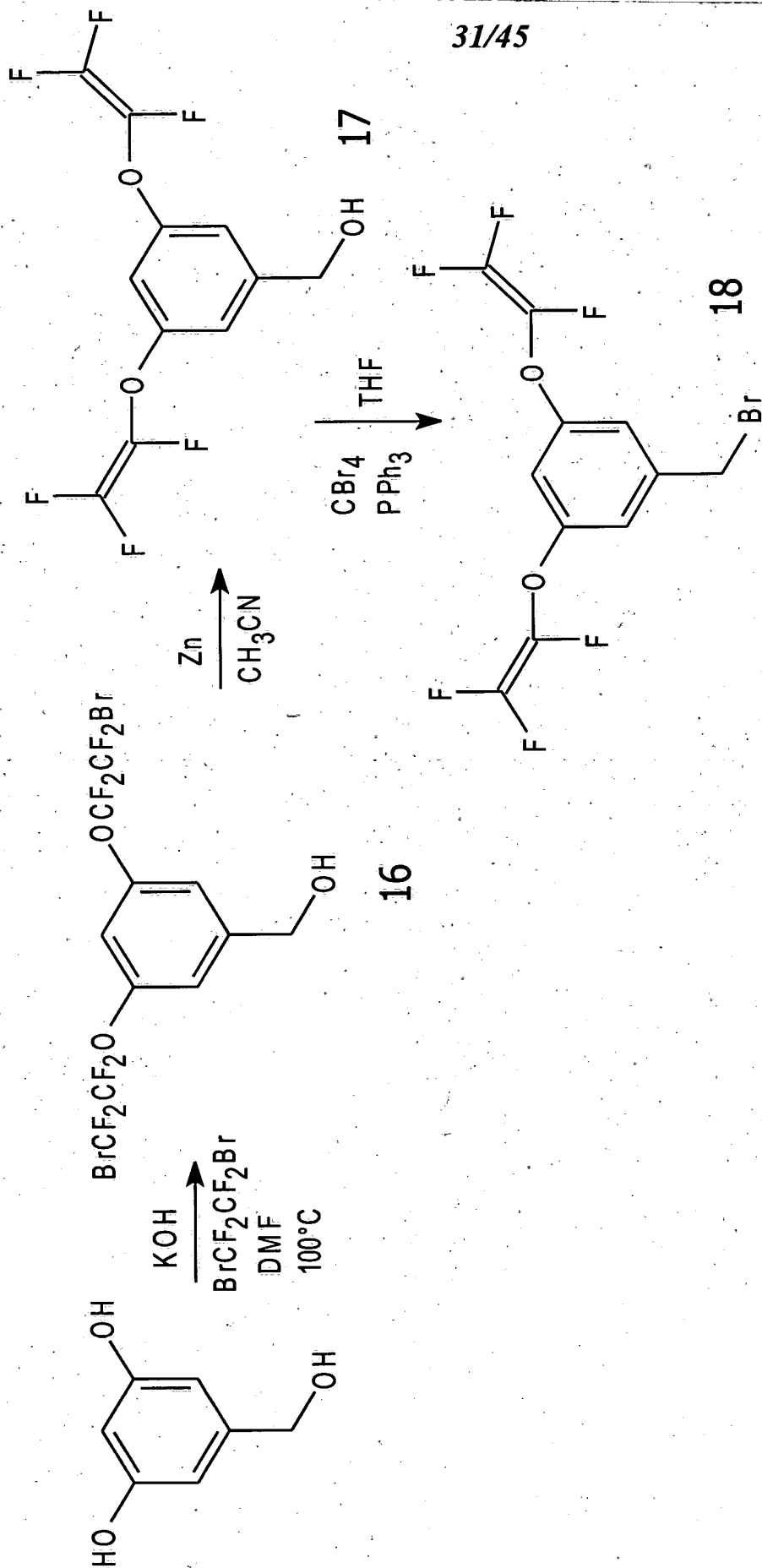


Fig.33.

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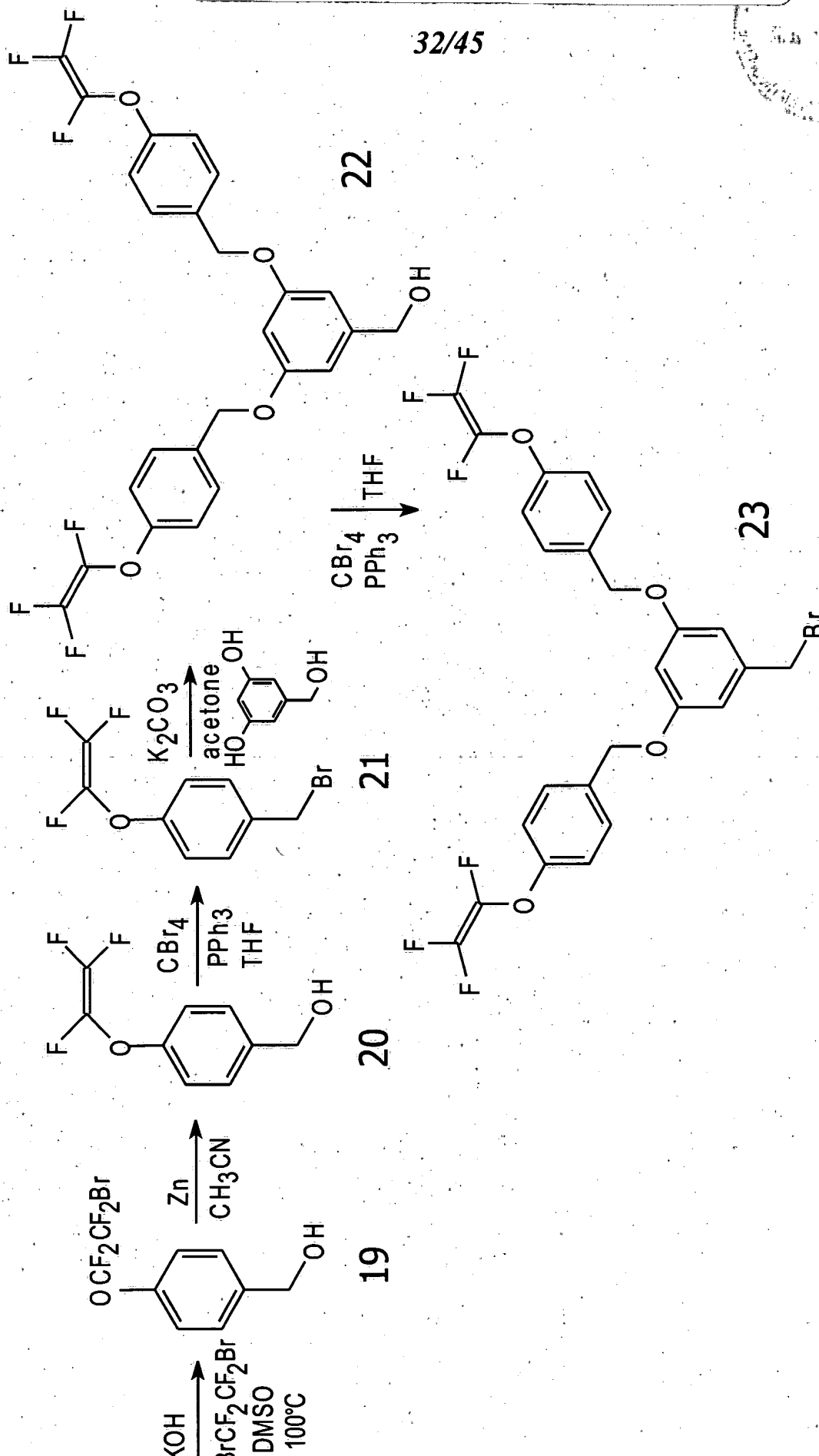


Fig. 34.



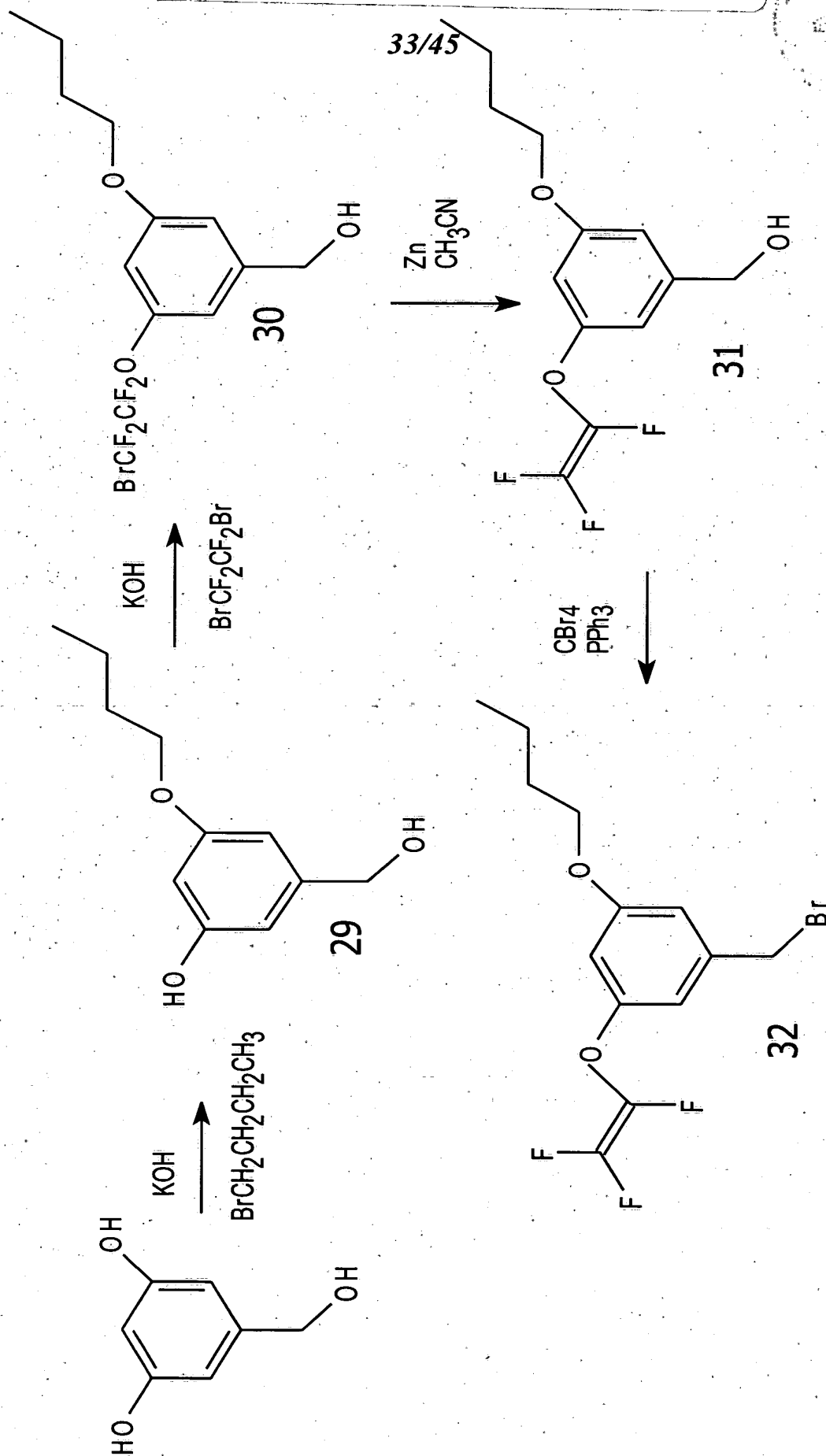
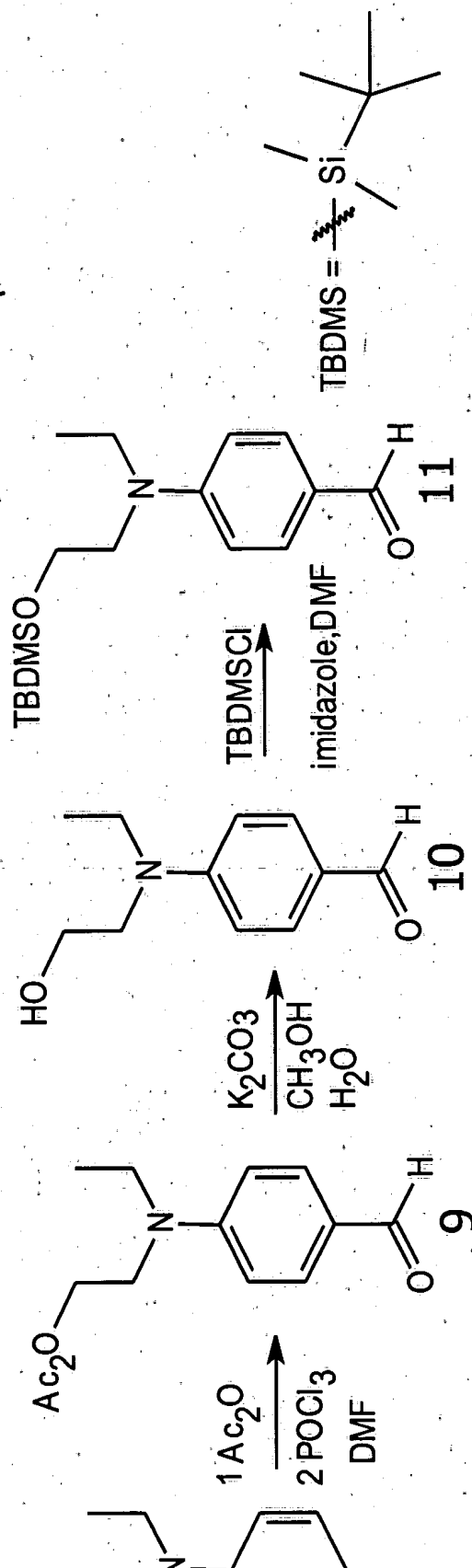
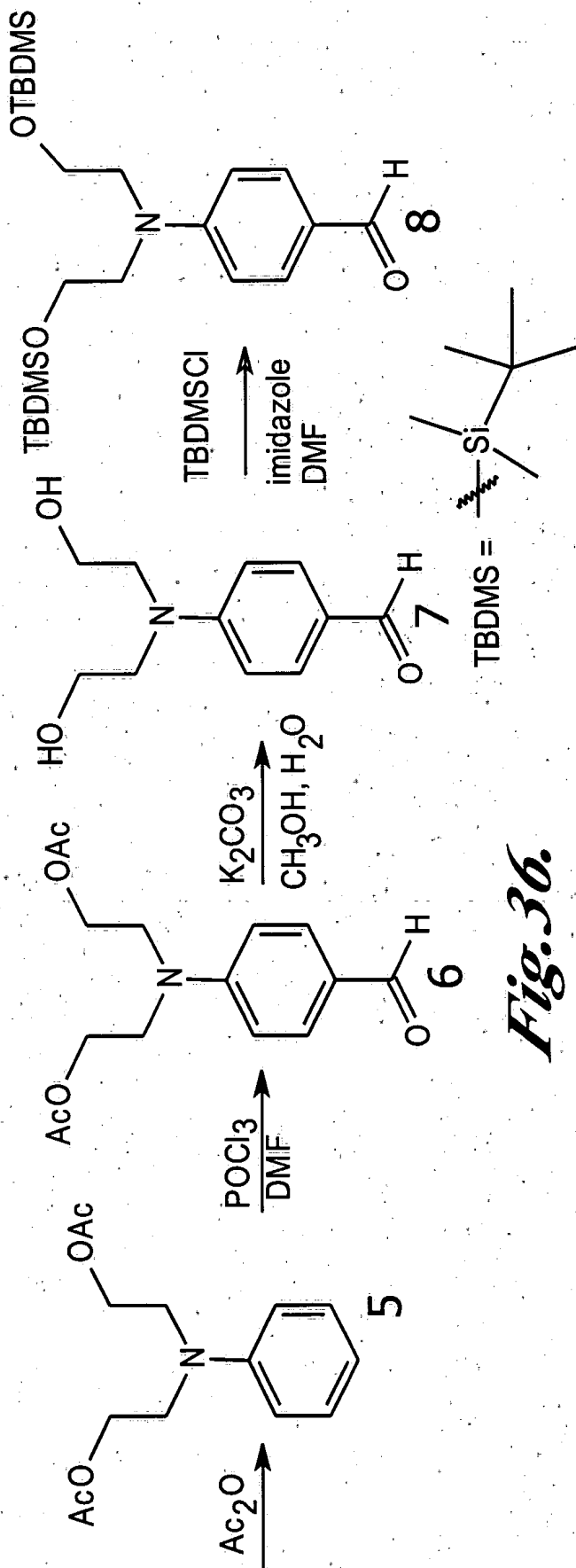


Fig.35.

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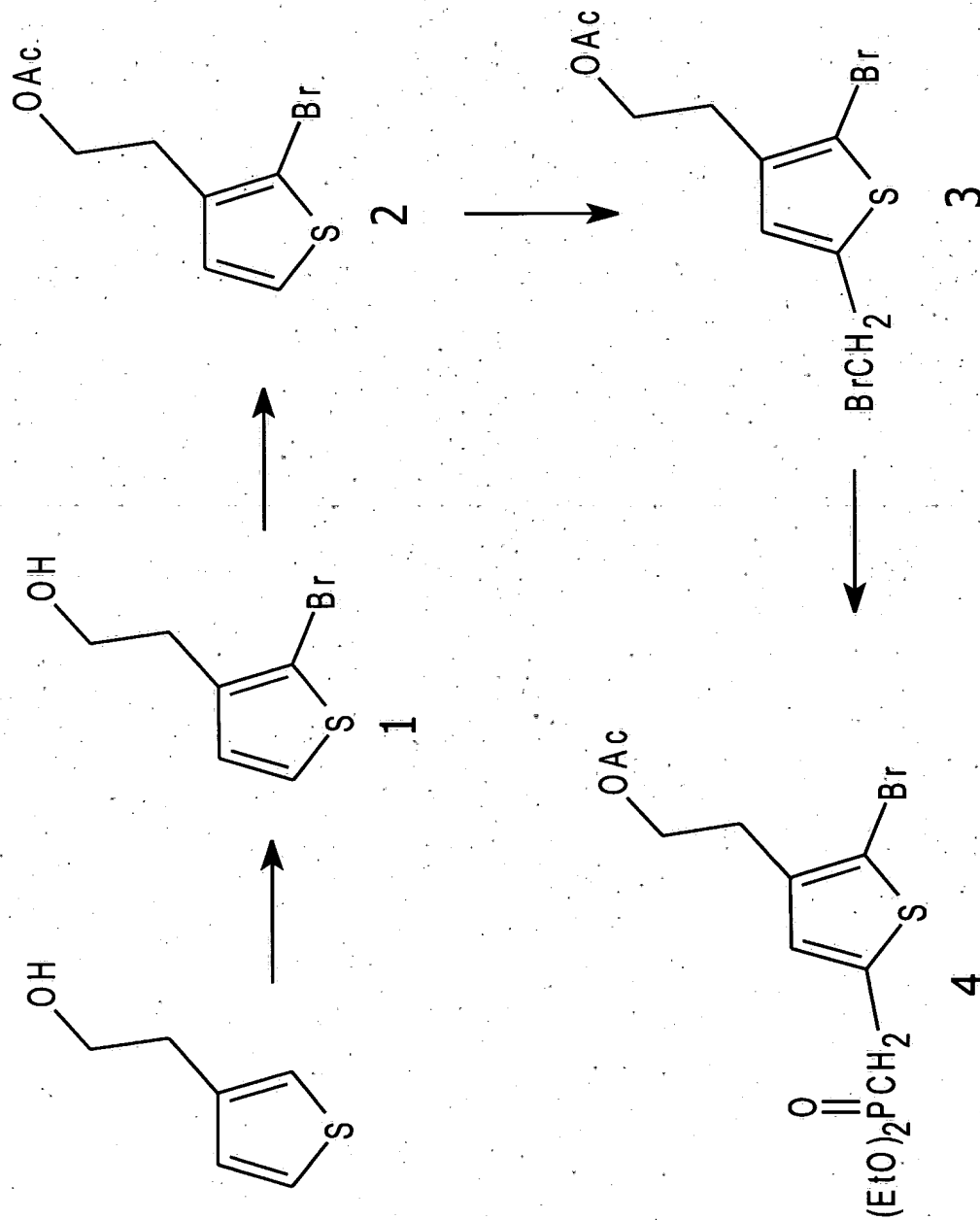
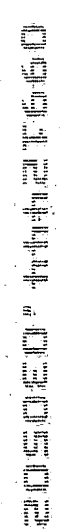
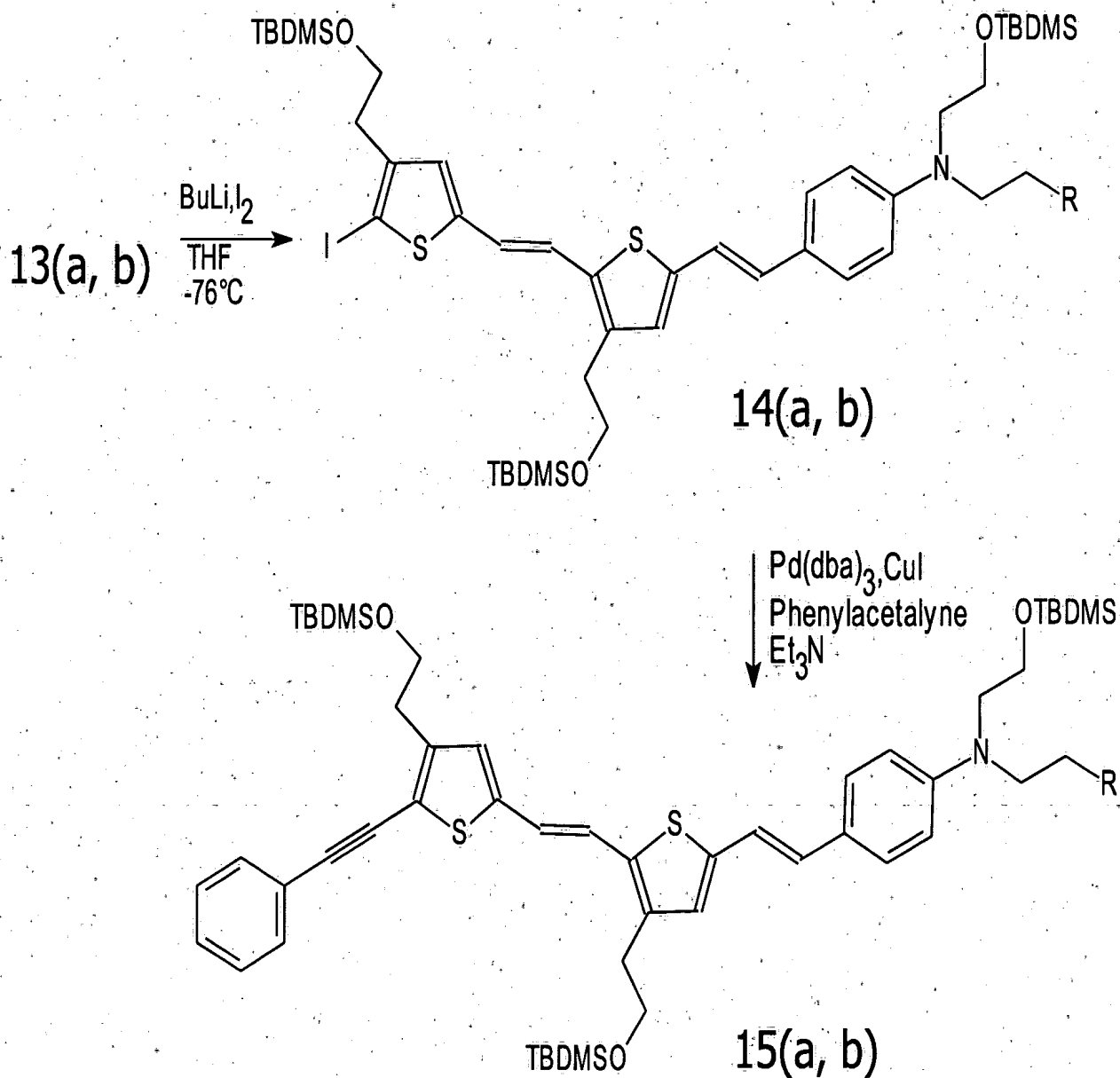


Fig. 38.



*Fig. 39.*

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a R = OTBDMS  
b R = H

Fig. 40

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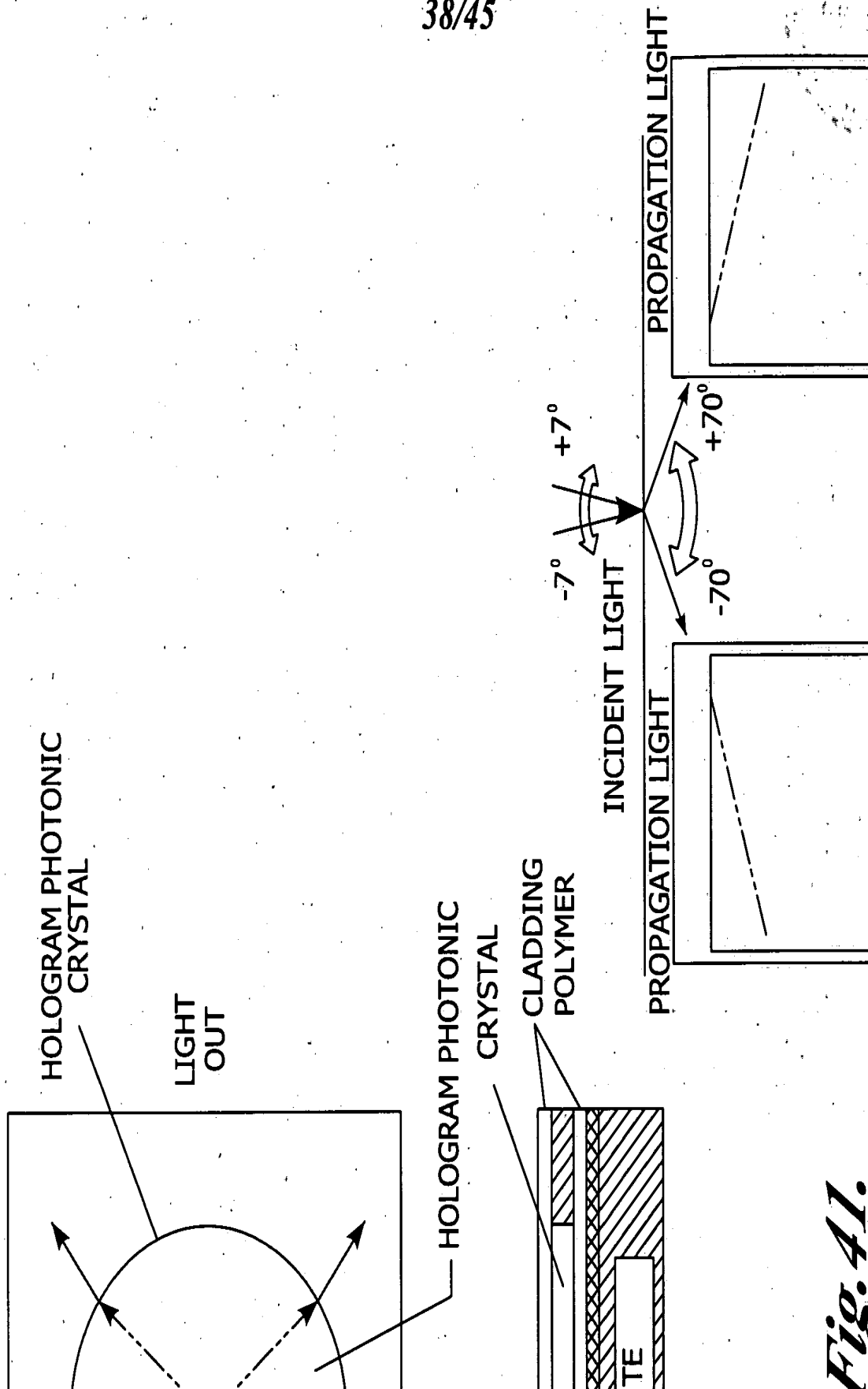
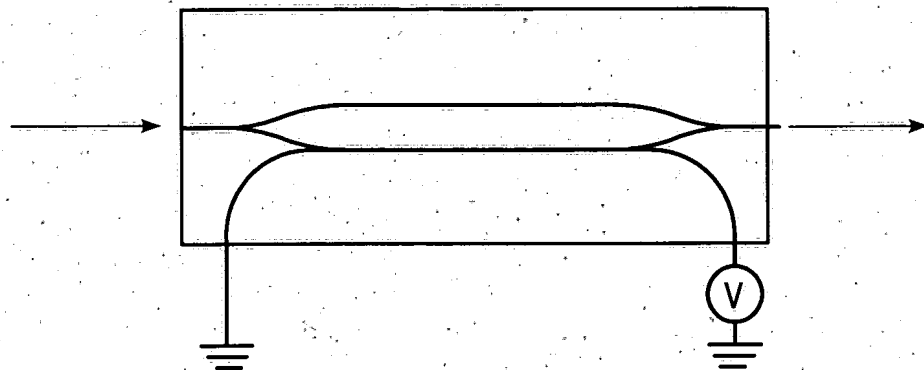
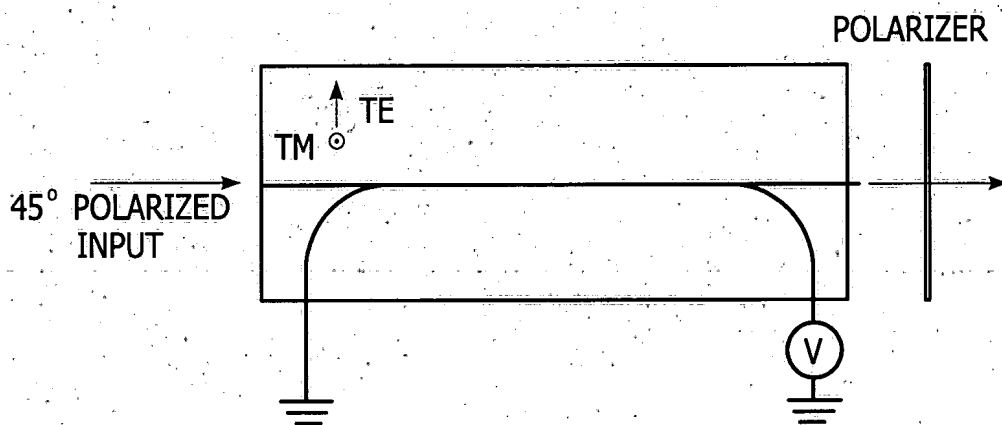


Fig. 41.

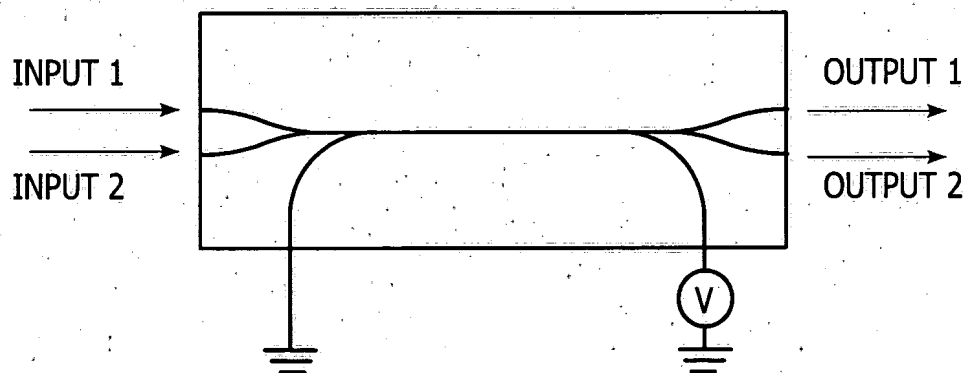
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MACH ZEHNDER MODULATOR



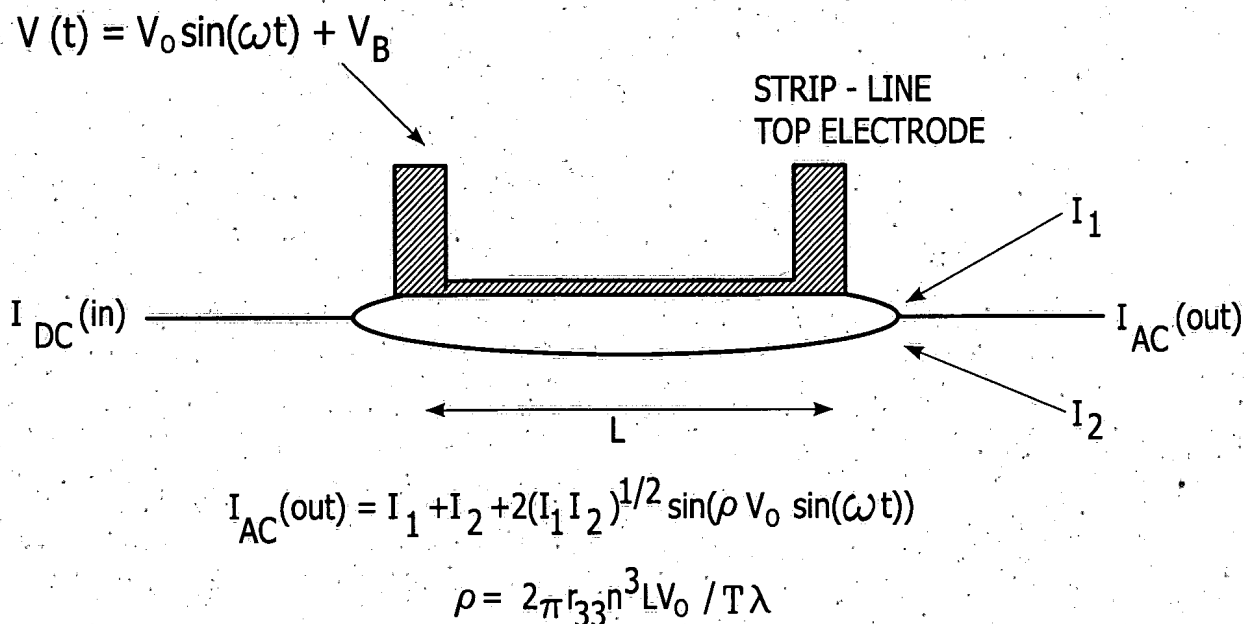
BIREFRINGENT MODULATOR



DIRECTIONAL COUPLER

*Fig. 42.*

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### COMPARISON OF KEY FEATURES OF SIMPLE DEVICES

MACH ZEHNDER  
INTERFEROMETER

BIREFRINGENT  
MODULATOR

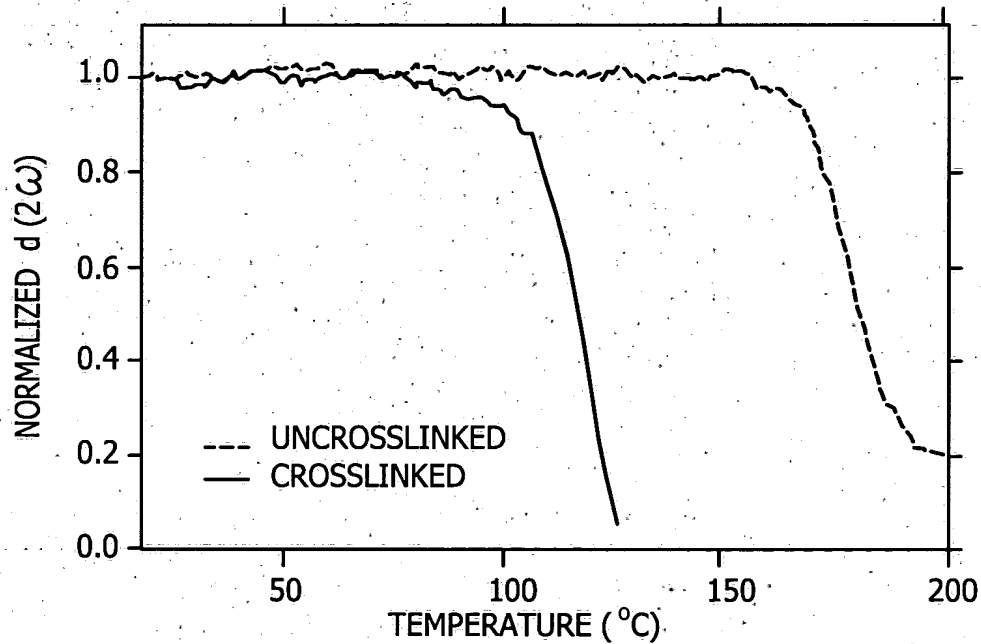
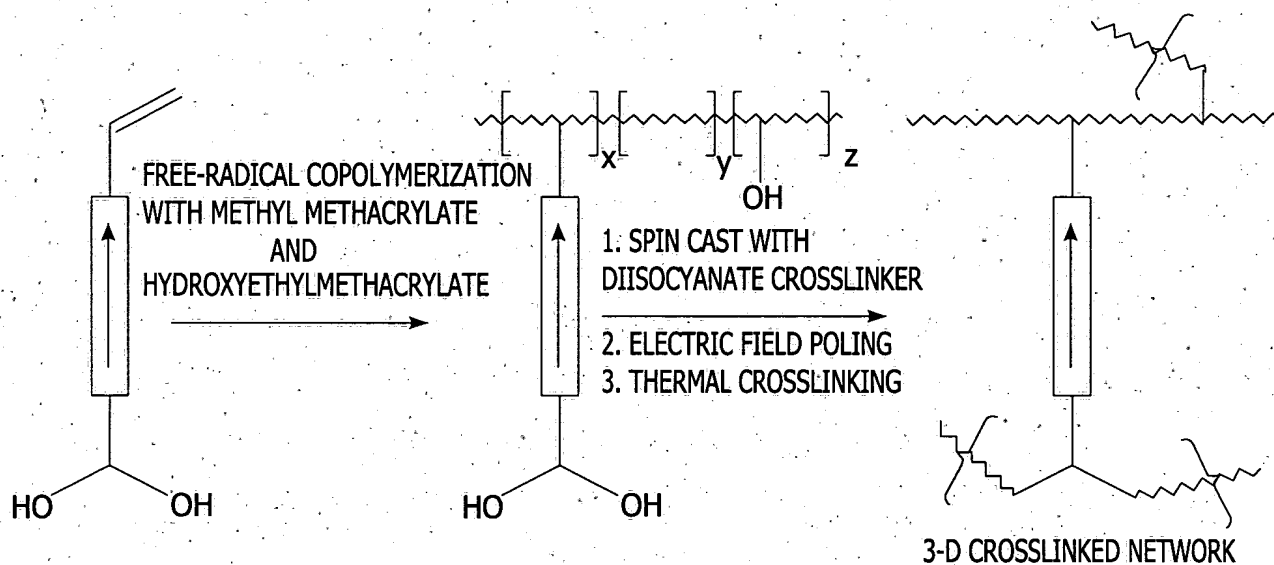
DIRECTIONAL  
COUPLER

$r_{eff}$	$r_{33}$	$r_{33} - r_{13}$	$r_{33}$
$V_{\pi}$	$V_{\pi MZ}$	$1.5 V_{\pi MZ}$	$1.73 V_{\pi MZ}$
Mod. Power	$P_{MZ}$	$2.75 P_{MZ}$	$3 P_{MZ}$

*Fig.43.*



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**Fig.44.**

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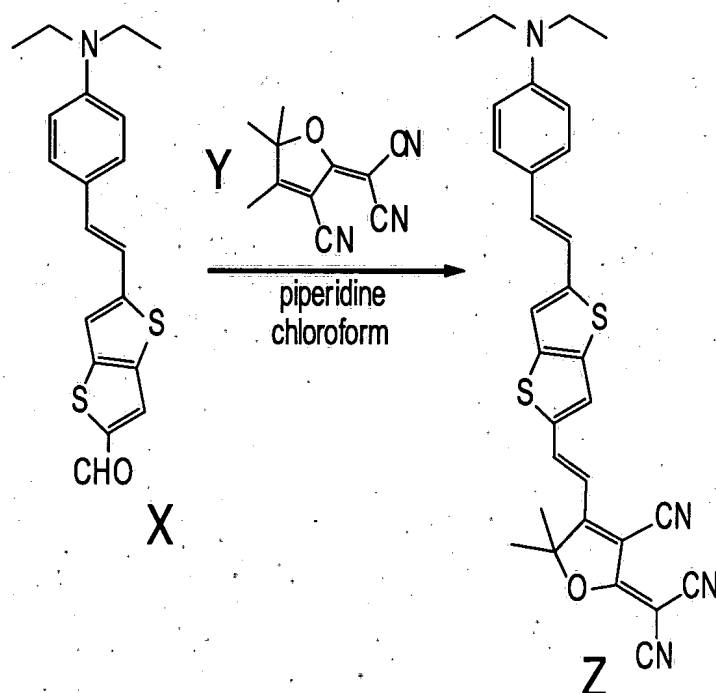
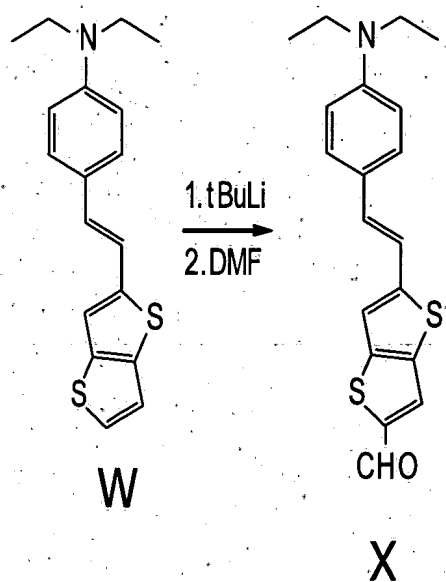
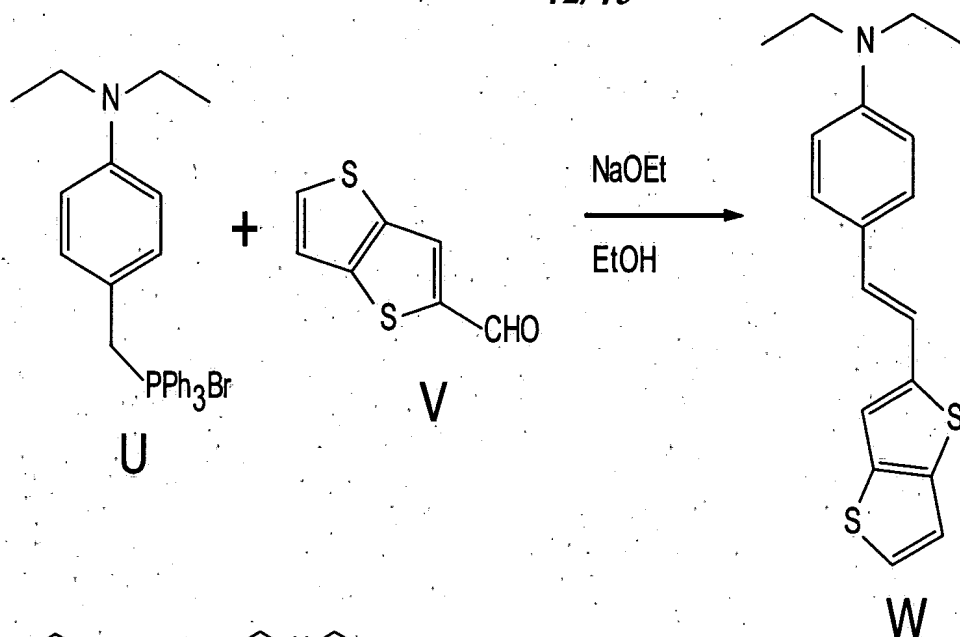


Fig.45.

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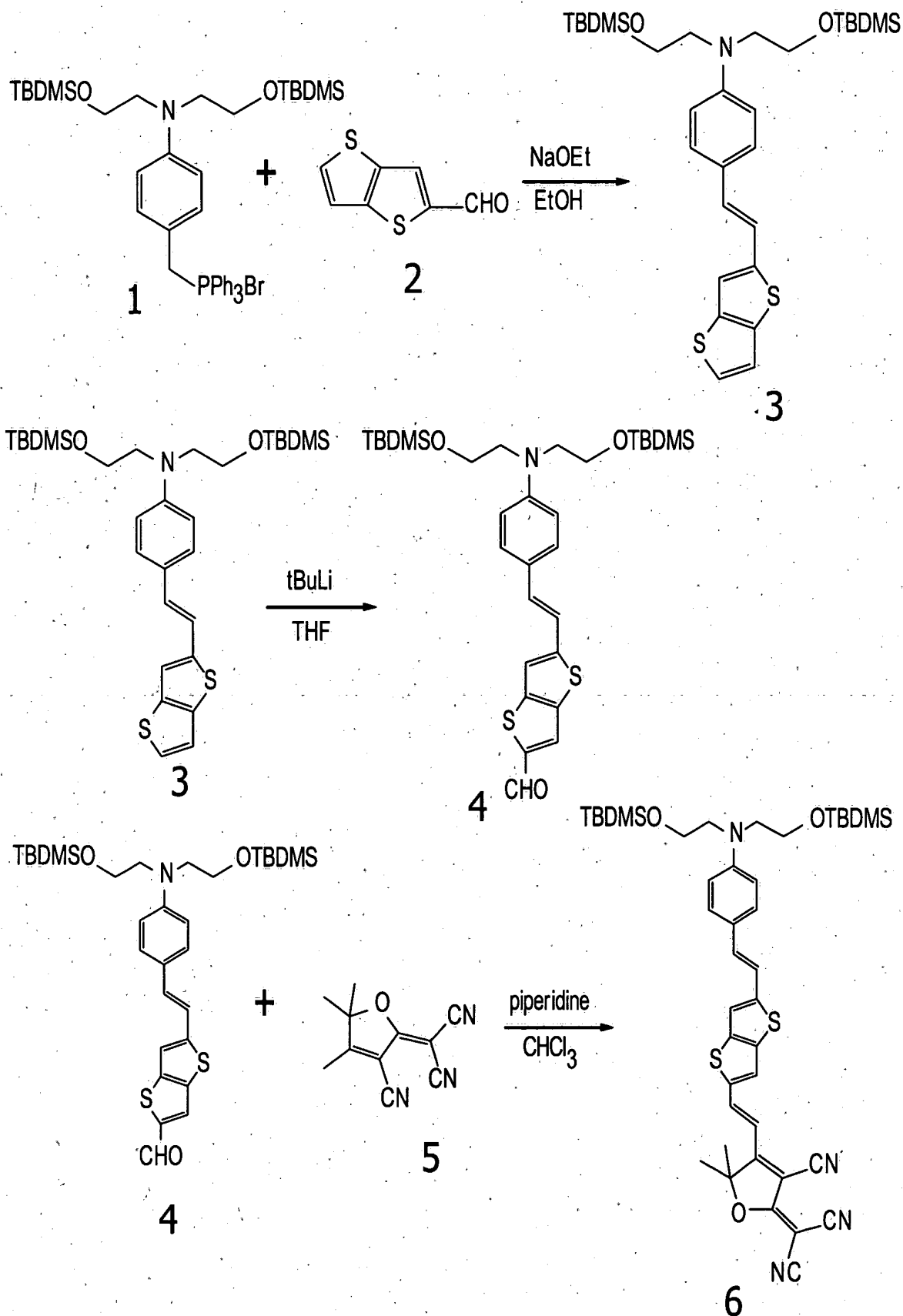
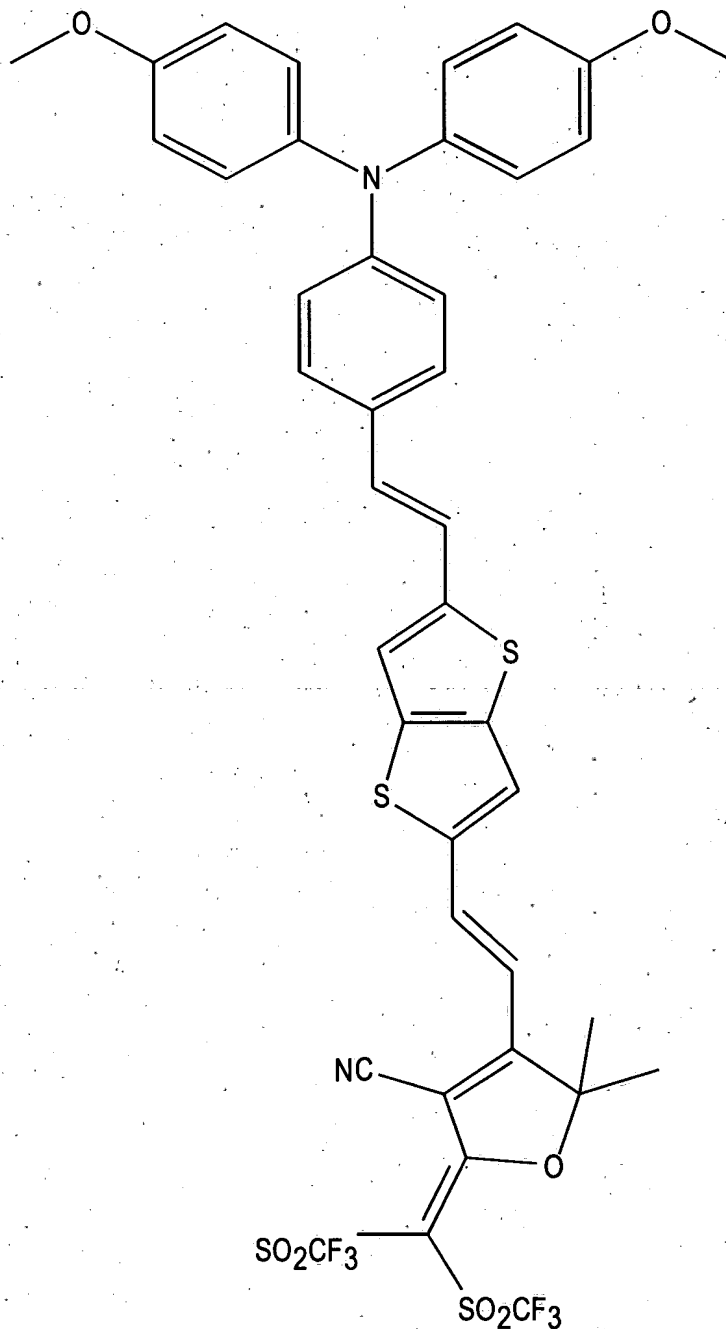


Fig. 46.

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**Fig.47.**

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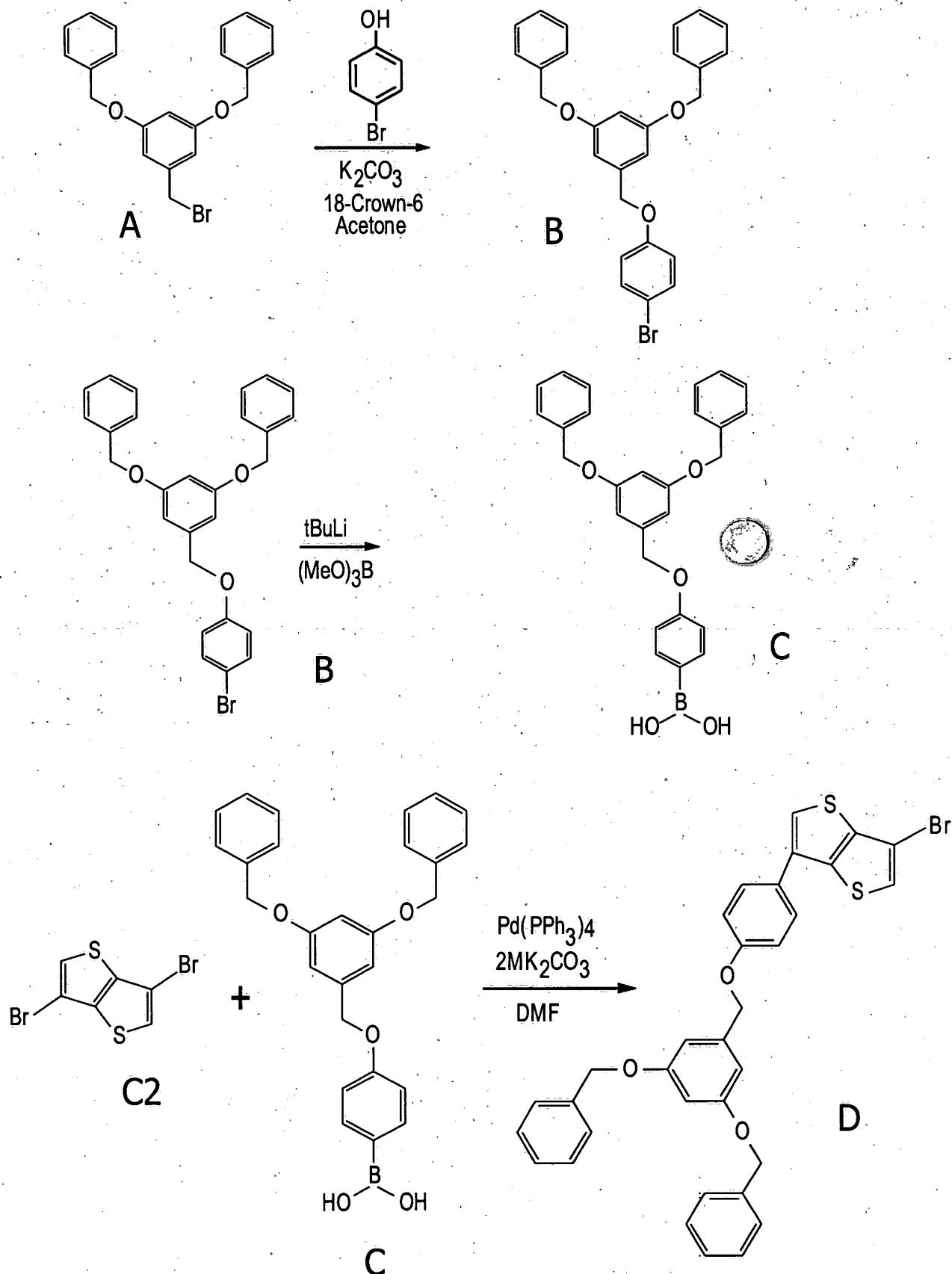


Fig. 48.